Permit[1]

Environmental Protection Act 1994

Environmental authority EPML00701913

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Permit[1] number: EPML00701913

Environmental authority takes effect 8 February 2022.

The anniversary date of this environmental authority is 20 December. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
Chinova Resources Cloncurry Mines Pty Ltd	Level 9, 303 Coronation Drive MILTON QLD 4064

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
Schedule 2 of the *Environmental Protection Regulation 2019*	
7(3)(d) Chemical manufacturing Manufacturing, in a year, a total of 200t or more of any of explosives. **8(5) Chemical storage** Storing 200m^3 or more of chemicals that are liquids, other than chemicals mentioned in items 1 to 3, under subsection (1)(d). **31(2) (b) Mineral processing** Processing, in a year, more than 100,000t of mineral products, other than coke. **33 Crushing, milling, grinding or screening** Crushing, grinding, milling or screening more than 5000t of material in a year. **60(1)(d) Waste disposal** Operating a facility for disposing of, in a year, more than 200,000t of waste mentioned in subsection (1)(a)	ML2454, ML2566, ML2688, ML2689, ML2690, ML2691, ML2692, ML2693, ML2694, ML2732, ML2733, ML2734, ML2735, ML2736, ML2737, ML2738, ML2745, ML2746, ML90043, ML90061, ML90215, ML90217

Queensland Government

Environmentally relevant activity(ies)	Location(s)
60(2)(a) Waste disposal Operating a facility for disposing of, in a year, less than 2000t of waste mentioned in subsection (1)(b). **63(1)(b)(i) Sewage treatment** Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of more than 100 but not more than 1500EP, if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme.	
63(1)(a) Sewage treatment Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP.	ML2733
Schedule 2A of the *Environmental Protection Regulation 2019*	
ERA16 Mining gold ore. **ERA 17** Mining copper ore. **19 Mining** Mining metal ore, other than a metal ore mentioned in items 11, 12, 14, 15, 16, 17 or 18.	ML2454, ML2566, ML2688, ML2689, ML2690, ML2691, ML2692, ML2693, ML2694, ML2732, ML2733, ML2734, ML2735, ML2736, ML2737, ML2738, ML2745, ML2746, ML90043, ML90061, ML90215, ML90217

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or

- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days) that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Resource projects

Please note that, in accordance with section 200 of the EP Act, if the EA is for a resource activity, the EA will not take effect until the relevant tenure is granted to the applicant.

Tibbs	8 February 2022
Signature	Date

Teale Gibbs
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Minerals Business Centre
Department of Environment and Science
PO Box 7230
CAIRNS QLD 4870
Phone: (07) 4222 5352
Email: ESCairns@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access state controlled roads), the Department of Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Conditions of environmental authority

The environmentally relevant activities conducted at the authorised locations must be conducted in accordance with the following site-specific conditions of approval:

- Schedule A - General
- Schedule B - Air
- Schedule C - Water
- Schedule D - Regulated Structures
- Schedule E - Land and Rehabilitation
- Schedule F - Noise and Vibration
- Schedule G - Waste
- Schedule H - Nature Conservation
- Schedule I - Definitions
- Schedule J - Site Plans and Monitoring Locations

Schedule A - General

Activity

(A1) This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.

(A2) In carrying out the mining activity authorised by this environmental authority, the environmental authority holder must comply with Schedule A - Table A1 (Authorised Mining Activities and Locations)

Schedule A - Table A1 (Authorised Mining Activities and Locations)

Mine Domain[3]	Mine Feature Name	Mining Lease/s located upon	Central Peg Coordinates Location (GDA94)		Maximum disturbance area (hectares)
			Easting	Northing	
Waste Rock Dump (WRD)	Mt Elliot WRD	2736	448241	7617661	3
	Lady Ella WRD	90061	447737	7613884	5.2
	257 WRD S	2733	445491	7602488	13
	257 WRD W	2733	445496	7602705	1.7
	251 WRD	2733	445356	7602131	4.7
	244 WRD E	2733	445729	7601237	2.2
	244 WRD W	2733	445314	7601284	9.7
	222 WRD	2733	445031	7598969	6
	222 WRD N	2733	444798	7599432	14.3
	Victoria WRD	90043	445517	7591143	3.5
	Victoria WRD 2	90043	TBD		0.5
	Merlin WRD	2688	447026	7605975	10
	276 WRD	2733	445577	7604708	9
	Mt Dore North WRD	2689	447862	7606003	23.3
	Mt Dore South WRD	2690	447111	7604705	18.2
	Starra 254 WRD	2733, 2745	445169	7602350	60
	Starra 254 PAF Cell	2733	445306	7602622	21.8
	Starra 244 Pit PAF Cell	2733	445499	7601412	6.4
	Starra 222 WRD Extended	2733	444976	7599883	15.4
Ore Stockpile	251 Ore Stockpile	90061	445436	7602961	0.6
	Victoria Ore Stockpile	2733	445437	7591252	0.5
	222 Copper Oxide	2733	445105	7599070	7.8
	Merlin Ore Stockpile	90043	TBD		Within Merlin WRD footprint
	276 Ore Stockpile	2733	TBD		Within 276 WRD footprint
	Lady Ella Ore Stockpile	90061	447482	7613372	3.1
	Mt Elliot Ore Stockpile	2735	447851	7617857	Within ROM footprint
	Starra 254 Oxide / Low Grade	2733	446201	7602261	5.1
Run of Mine (ROM)	Mt Elliott ROM	2735	447851	7617857	3
	Selwyn Mill ROM	2733	446084	7602009	Part of Ore Stockpile
	Merlin ROM	2688	447039	7605795	2
	276 ROM	2733	445474	7604362	1.5
	Lady Ella ROM	90061	447482	7613372	Part of Ore Stockpile
	Mt Dore ROM/ Agglomerator/ Crusher	2690	446935	7603817	12.9
	Starra 254 ROM	2733	445779	7601906	3.8

Mine Domain[3]	Mine Feature Name	Mining Lease/s located upon	Central Peg Coordinates Location (GDA94)		Maximum disturbance area (hectares)
			Easting	Northing	
	Starra 222 ROM	2733	444947	7598419	2.2
Processing Area	Old Selwyn Mill	2733	446092	7601916	8.8
	Merlin Concentrator	2688	446949	7605757	1
	Mt Dore Process Plant	2733	446539	7603521	1.1
	Mt Dore Process Ponds	2733	446285	7603437	5.9
Heap Leach	Mt Dore ROM/ Process/ Heap Leach Surrounds	2690, 2692, 2693 & 2733	446935	7603817	23.8
	Heap Leach	2733	445855	7601856	TBA
	Mt Dore Heap Leach Pad	2690, 2692 & 2733	446544	7603860	28.7
Portals	Mt Elliot Portal	2736	448161	7617779	0.4
	Merlin Portal	2688	447191	7605706	0.3
	276 Portal	2733	445584	7604541	0.2
	251 Portal	2733	445746	7602261	0.3
	222 Decline	2733	444741	7599052	Within Pit 222 footprint
Open Cut Pit	Lady Ella Pit	90061	447705	7613615	3.3
	257 Pit	2733	445638	7602634	Within Starra 254 footprint
	251 Pit	2733	445472	7602051	Within Starra 254 footprint
	244 Pit	2733	445499	7601412	5.3
	222 Pit	2733	444830	7599171	8.4
	Victoria Pit N	90043	445596	7591820	1.6
	Victoria Pit S	90043	445422	7591249	1
	Mt Dore North Pit	2688 & 2689	447564	7605514	6.9
	Mt Dore South Pit	2690 & 2691	447633	7604595	28.7
	Starra 254	2733	445568	7602253	23.1
Subsidence	Mt Elliot Subsidence	2735 & 2736	448025	7617952	0.39
	244 Subsidence	2733	TBD	TBD	0.04
Tailings Storage Facility (TSF)	Eastern TSF	2692, 2733 & 2746	446829	7601989	39
	Southern TSF	2746 & 2733	445963	7599341	49
Water Storages and Sediment Dams (SD)	Mt Elliott Southern SD	2736	448260	7617465	TBA
	Lady Ella SD	90061	447887	7613850	TBA
	Lady Ella Northern SD	90061	447758	7614063	TBA
	276 SD W	2733	445266	7604387	2
	276 SD NW	2733	445382	7604582	TBA
	257 Northern SD	2733	445455	7603182	TBA
	257 North-Western SD	2733	445240	7603058	TBA
	257 Western SD	2733	445109	7602711	TBA
	251 Northern SD	2733	445443	7602279	TBA
	251 North-Western SD	2733	445358	7602263	TBA
	251 Southern SD	2733	445290	7601912	TBA
	Lake Wyche	2733	445570	7600829	5.9
	222 Northern SD	2733	445202	7600376	TBA
	222 Western SD	2733	444459	7599408	TBA
	222 Southern SD	2733	444572	7598466	TBA
	Victoria SD	90043	445649	7591272	TBA

Mine Domain[3]	Mine Feature Name	Mining Lease/s located upon	Central Peg Coordinates Location (GDA94)		Maximum disturbance area (hectares)
			Easting	Northing	
	Merlin SD (North of WRD)	2688	446941	7606093	TBA
	Merlin SD (Paste Plant)	2688	447018	7605367	0.5
	Merlin 1 Environment Dam (General Infrastructure)	2688 & 2733	446653	7605687	19
	Merlin 2 Environment Dam (ROM and WRD)	2688	446802	7605871	1
	Merlin 3 Environment Dam (WRD)	2688	TBD[2]	TBD[2]	TBD[2]
	Eastern TSF Duck Pond	2733	446465	7601936	TBA
	Eastern TSF Seepage Pond	2693	447180	7602347	TBA
	Selwyn Pregnant Liquor Pond	2733	445906	7601790	TBA
	Selwyn SD	2733	445981	7601937	TBA
	Mt Dore ROM Dam	2690	446805	7604059	0.98
	Mt Dore North WRD Environment Dam 1	2689	447859	7606418	0.36
	Mt Dore North WRD Environment Dam 2	2689	447688	7605287	0.34
	Mt Dore South WRD Environment Dam	2690	447571	7603526	0.73
	254 ROM Dam	2733	445866	7601744	0.5
	Starra 254 LG Stockpile Pond	2733	446100	7602085	0.8
	254 WRD Sediment Dam 1	2733	445027	7603109	0.7
	254 WRD Sediment Dam 2	2733, 2745	444689	7602389	1.2
	254 WRD Sediment Dam 3	2733, 2745	444687	7601896	1.4
	254 WRD Sediment Dam 4	2733	445016	7601638	0.5
	Starra 254 PAF Dam	2733	444948	7602581	within 254 WRD area
	Starra 222 ROM Pad Pond	2733	444858	7598412	0.2
	254 Turkeys Nest	2733	445656	7602217	0.2
Topsoil Stockpiles	276 Soil Stockpile	2733	445463	7604714	0.75
	Merlin Soil Stockpile	2688	446612	7605611	1.5
	222 Soil Stockpile	2733	445240	7598705	3.6
	Mt Dore North WRD Soil Stockpiles	2689	TBD	TBD	1.2
	Mt Dore North Pit Soil Stockpile	2688, 2689 & 2691	TBD	TBD	0.88
	Mt Dore South WRD Soil Stockpiles	2690 & 2733	TBD	TBD	2.54
	Mt Dore South Pit Soil Stockpile	2691	TBD	TBD	1.72
	Mt Dore Process Plant Soil Stockpile	2692 & 2733	TBD	TBD	1.83
	Mt Dore Leach Pad Soil Stockpile	2733	TBD	TBD	3.45
	Starra 254	2733	TBD[2]	TBD[2]	4
	Starra 222	2733	TBD[2]	TBD[2]	2
Exploration	Proposed further exploration	2454, 2688, 2691, 2692, 2693, 2733, 2735, 2736, 2746, 90043, 90061, 90214 & 90217	TBD	TBD	25
Ancillary Infrastructure	276 Infrastructure	2733	445538	7604246	1.2
	Merlin Paste Plant	2688	447053	7605343	1.25

Mine Domain[3]	Mine Feature Name	Mining Lease/s located upon	Central Peg Coordinates Location (GDA94)		Maximum disturbance area (hectares)
			Easting	Northing	
	Merlin Infrastructure	2688, 2690 & 2733	446729	7605473	8
	Donghui Village (formerly Mt Dore Camp)	2691 & 2693	447675	7603637	13
	Merlin-Osborne Power Line	90215 & 90217	TBD	TBD	113
	Merlin Power Substation	2733	TBD	TBD	TBD
	STD Power Spur Line & Transformer	2733	TBD	TBD	TBD
	Mt Dore Equipment Parking	2690	447044	7604036	3.8
	Mt Dore Laydown Area	2690 & 2692	447019	7603620	4.4
	Starra 254				
	254 Explosives Magazines (2)	2733	445308	7603313	0.1
	254 Water truck Fill Point	2733	446353	7602260	0.3
	254 Dewatering Pipeline	2733	445930	7602002	1.0
	Selwyn Precinct				
	Selwyn Precinct Offices & Ablutions	2733	446183	7601877	0.4
	Selwyn Precinct Workshop	2733	446113	7601785	0.9
	Selwyn Precinct Go-Bay	2733	446122	7601855	0.3
	Selwyn Precinct Warehouse	2733	446045	7601785	0.2
	Selwyn Precinct Fuel Storage	2733	446205	7602014	0.4
	Selwyn Precinct Boilermakers	2733	445995	7601799	0.7
	Selwyn Precinct STP	2733	446209	7601665	0.2
	Selwyn Precinct RO	2733	446232	7601919	0.1
	Selwyn Precinct Waste Trench	2733	445960	7601667	0.6
	Selwyn Precinct Batch Plant	2733	446092	7601684	0.4
	Starra 222				
	Selwyn – 222 Powerline	2733	445997	7601153	1.2
	222 Fuel Storage Power generation	2733	445142	7599263	0.7
	222 Offices & Ablutions	2733	444902	7598622	0.5
	222 Workshop	2733	444837	7598630	0.8
	222 Go-bay	2733	444838	7598570	0.3
	222 Jacking pad	2733	445177	7599226	0.2
	222 Laydown/UG Power Generation	2733	444711	7598796	1.1
	222 STP	2733	444901	7598667	0.2
	222 RO Plant	2733	444941	7598639	0.1
	222 Header Tank	2733	445046	7598944	0.1
	222 Water Truck Fill	2733	445093	7598646	0.1
	222 Batch Plant	2733	444739	7598438	0.3
	222 Air-rises (2)	2733	TBD	TBD	0.3
Pipelines	Tailings Line	TBA	TBD	TBD	3.65
	Merlin-Osborne Water Line	90215 & 90217	TBD	TBD	Within power line footprint
	Tailings Pipeline Access Road	2688, 2689, 2690, 2733, 2691, 2693,	TBD[2]	TBD[2]	7.3

Mine Domain[3]	Mine Feature Name	Mining Lease/s located upon	Central Peg Coordinates Location (GDA94)		Maximum disturbance area (hectares)
			Easting	Northing	
		2692, 2746, 2694			
	De-watering Line	2691, 2692, 2693, 2746	447569	7602852	5.6
	Selwyn Precinct Raw Water	2693, 2692, 2733	446671	7603837	1.1
	Starra 254 Dewater / Waste	2733, 2746	446558	7601354	0.6
	Selwyn Precinct Dewatering Pipeline	2733	446139	7601746	1.0
	Selwyn to Starra 222 Raw water	2733	445204	7600047	1.7
	Starra 222 Raw water	2733	445046	7598944	0.9
	Starra 222 Dewater / Waste	2733	445292	7599111	0.6
Roads and Tracks	Merlin Roads	2688 & 2689	446809	7605578	4.2
	276 Roads	2733	445428	7604090	6.5
	Other Roads	2735, 2736, 90043 & 90061	447495	7618034	85
	Haul Road	90215 & 90217	447676	7603521	113
	Donghui Village Roads	2691, 2693	447496	7604797	0.5
	Starra 254 Haul Roads	2733	445285	7602175	8.1
	Starra 222 Haul Roads West	2733	444314	7598840	9.2
	Starra 222 Haul Roads East	2733	445285	7598772	11.2

Notes:

1. TBA – The environmental authority holder must provide this detail/information, as well as updated plans and maps, to the administering authority by **1 July 2017**.
2. TBD – The environmental authority holder must provide this detail to the administering authority on completion of site layout plans in the form of an amendment application under the *Environmental Protection Act, 1994*.
3. TBD[2] - The environmental authority holder must provide this detail to the administering authority by **30 March 2022** in the form of an amendment application under the Environmental Protection Act, 1994.
4. Mine domains depicted in Schedule J, Plans 2-5.

Maintenance of Measures, Plant & Equipment

(A3) The environmental authority holder must:

(a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; and

(b) maintain such measures, plant and equipment in a proper and efficient condition; and

(c) operate such measures, plant and equipment in a proper and efficient manner; and

(d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.

Monitoring

(A4) The environmental authority holder must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than ten (10) business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

(A5) All monitoring and sampling required by this environmental authority must be undertaken by an appropriately qualified person.

(A6) Except where specified otherwise in another condition of this environmental authority, all monitoring records, reports and plans required by this environmental authority must be kept for a period of not less than five (5) years and be provided to the administering authority upon request.

(A7) The following information must be recorded in relation to all monitoring required under the conditions of this environmental authority:

(a) the date and time at which the sample was taken; and

(b) the location or monitoring point at which the sample was taken; and

(c) the results of all monitoring and details of any exceedances of the conditions of this environmental authority; and

(d) any other pertinent details in order to interpret the sampling results (i.e. stream flow, wind conditions or any unusual observations such as odour or colouration).

Financial Assurance

(A8) Financial assurance must be lodged with the administering authority in the amount, the form and within the time required by the administering authority.

Risk Management

(A9) The environmental authority holder must develop and implement a risk management system for mining activities which conforms to the Standard for Risk Management (ISO31000:2009) or the latest edition of the equivalently recognised Standard for Risk Management.

Notification of Emergencies, Incidents & Exceedances

(A10) The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.

(A11) Notification to the administering authority, in accordance with condition (A10) must be provided to the administering authority's Pollutions Hotline on 1300 130 372 and the PollutionHotline@des.qld.gov.au.

(A12) Within ten (10) business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:

(a) results and interpretation of any samples taken and analysed; and

(b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and

(c) proposed actions to prevent a recurrence of the emergency, incident or event.

(A13) The environmental authority holder must notify the occupiers or registered owners of affected land and any other potentially impacted stakeholder as soon as reasonably practicable after becoming aware of the event of any emergency, incident or exceedance that has the potential to impact on environmental values or breaches any condition of this environmental authority concerning releases of contaminants to the environment.

(A14) The notification in conditions (A13) must include the following:

(a) the location of the emergency, incident or exceedance; and

(b) the date and time of the emergency, incident or exceedance; and

(c) the estimated quantity and type of any substances involved in the emergency, incident or exceedance; and

(d) the potential impacts to environmental values caused by the emergency, incident or exceedance; and

(e) where there is potential impact on livestock or human health, precautionary measures that should be taken.

Investigations

(A15) Except where specified otherwise in another condition of this environmental authority, in the event of any monitoring showing exceedance of trigger values or limits specified in the conditions of this environmental authority, the environmental authority holder must:

(a) complete an investigation to identify the potential cause of the exceedance and the potential for environmental harm being caused or likely to be caused by the exceedance; and

(b) provide a written report to the administering authority within three (3) months of the date of the original exceedance, outlining:

(i) details of the investigation carried out; and

(ii) actions taken to prevent environmental harm.

Complaints

(A16) The environmental authority holder must record all environmental complaints received about the mining activities, promptly notify the administering authority of the complaint and provide any details requested by the administering authority relating to the complaint, including:

(a) name, address and contact number of the complainant; and

(b) time and date of the complaint; and

(c) reasons for the complaint; and

(d) investigations undertaken; and

(e) conclusions formed; and

(f) actions taken to resolve the complaint; and

(g) any abatement measures implemented; and

(h) person responsible for resolving the complaint.

Third Party Auditing

(A17) By 9 March 2018, the holder of this environmental authority must:

(a) obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority; and

(b) obtain further such reports at regular intervals, not exceeding 3 yearly intervals, from the completion of the report referred to above; and

(c) provide each report to the administering authority within 90 days of its completion.

(A18) The environmental authority holder must implement any findings arising from the audit (unless the administering authority confirms in writing they are not required) and take necessary action to ensure compliance with the conditions of this environmental authority.

Transition to New Standards

(A19) Where a condition of this environmental authority requires compliance with a standard published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this authority the environmental authority holder must:

(a) Comply with the amended or changed standard within 12 months of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation or where the amendment or change relates specifically to regulated structures referred to in condition (D38), the time specified in that condition; and,

(b) Until compliance with the amended or changed standard is achieved, continue to remain in compliance with the standard that was current immediately prior to the relevant amendment or change.

Meteorological Monitoring

(A20) By 9 March 2018, the environmental authority holder must establish and maintain an automatic weather station at the licensed place to monitor, measure and record daily data on wind speed, wind direction, temperature and rainfall.

Exploration

(A21) All exploration activities carried out on the relevant mining tenures must comply with the provisions detailed in the administering authority's *Eligibility criteria and standard conditions for exploration and mineral development projects – Version 2* (the Code). Where there is a discrepancy between the Code and this environmental authority, the conditions of the environmental authority apply.

END OF CONDITIONS FOR SCHEDULE A

Schedule B - Air

General

(B1) The environmental authority holder must ensure that air emissions do not cause environmental harm to any sensitive place or commercial place.

Ambient Air Quality - Dust and Particulate Monitoring

(B2) By 8 September 2017, the environmental authority holder must develop and implement an ambient air quality and dust deposition monitoring program, at the monitoring points specified in Schedule B - Table B1 (Air Quality Monitoring Sites) and shown in Schedule J - Plan 1 (Air Quality Monitoring Sites) at the monitoring frequency and for the contaminants specified in Schedule B - Table B2 (Dust Deposition Trigger Values and Limits).

*Note: the environmental authority holder must provide Schedule J - Plan 1 (Air Quality Monitoring Sites) in a form and by the means acceptable to the administering authority by **8 September 2017**.*

Schedule B - Table B1 (Air Quality Monitoring Sites)

Site	Latitude (GDA94)	Longitude (GDA94)	Monitoring Location
Compliance			
1	445347	7604649	276 ROM
2	446792	7605904	Merlin ROM
3	446491	7602371	Eastern TSF
4	446810	7604369	Downwind of the Three Stage Crushing, Agglomeration, ROM areas
5	446875	7605337	Downwind of South WRD & South pit
6	447535	7606652	Downwind of North WRD and North Pit
7	445852	7602943	Downwind of the Starra 254 ROM Pad
8	444558	7598548	Downwind of the Starra 222 ROM Pad
9	445015	7603176	Downwind of the Starra 254 WRD
10	445172	7600440	Downwind of the Starra 222 WRD
11	447584	7606582	MDHL North Pit
Reference[1]			
1	451487	7602062	General Reference Site

Notes:
1. Reference sites must be located in areas that are not impacted by mining activities.

(B3) The environmental authority holder must conduct activities in such a manner so as not to cause any exceedance of the limits identified in Schedule B - Table B2 (Dust Deposition Trigger Values and Limits) at or beyond the boundaries of the licensed place.

Schedule B - Table B2 (Dust Deposition Trigger Values and Limits)

Contaminant[5,2]	Limit Type	Trigger Level	Air Quality Limit[3]	Frequency of Monitoring
Arsenic and its compounds as arsenic	Annual average	4 µg/m^2/day[3]	-	Monthly
Cadmium and its compounds as cadmium	Annual average	2 µg/m^2/day[3]		
Lead and its compounds as lead	Annual average	100 µg/m^2/day[4]	250 µg/m^2/day[1]	
Dust deposition (total insoluble matter)	Monthly average	-	120 mg/m^2/day[4]	

Notes:
1. World Health Organisation – Air Quality Guidelines for Europe Second Edition, 2000 (Chapter 6 page 152).

2. Monitored in accordance with the most recent version of Australian Standard AS3580.10.1 *Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method*.
3. Limits based on First General Administrative Regulation Pertaining to the Federal Emission Control Act (Technical Instructions on Air Quality Control – TA Luft) (Table 6).
4. New Zealand Ministry for Environment Good Practice Guide for Assessing and Managing for Environmental Effects of Dust Emissions (Table 7.1).
5. Particulate matter deposition limit calculated over one month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter – Gravimetric method.

(B4) In the event of any monitoring showing exceedance of a dust deposition trigger value or limit specified in Schedule B - Table B2 (Dust Deposition Trigger Values and Limits), the holder of this environmental authority must:

(a) complete an investigation to identify the potential cause of the exceedance and the potential for environmental harm being caused or likely to be caused by the exceedance; and

(b) provide a written report to the administering authority within three (3) months of the date of the original exceedance, outlining:

(i) details of the investigation carried out; and

(ii) actions taken to prevent environmental harm.

Mineral Concentrate Management

(B5) Mineral concentrate storage, handling and loading facilities must be constructed, maintained and operated in a manner that prevents the release of contaminants to the receiving environment.

END OF CONDITIONS FOR SCHEDULE B

Schedule C - Water

Release to Waters

(C1) Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.

Contaminant Release to Waters

(C2) The release of contaminants to waters must only occur from the release points specified in Schedule C - Table C1 (Contaminant Release Points).

(C3) The release of contaminants to waters must be monitored at the locations specified in Schedule C - Table C1 (Contaminant Release Points) at the frequencies specified and for all parameters listed in Schedule C - Table C2 (Release Water Contaminant Limits).

Schedule C - Table C1 (Contaminant Release Points)

Release Point[3]	Description of Waste Water Release	Description of Source	Description of Receiving Waters	Release Point Location	
				Latitude (GDA94)	Longitude (GDA94)
Mt Elliot Catch Dam	Overflow of Dam	Surface runoff from Mt Elliot WRD and ROM	Ephemeral stream reporting to Maggies Creek	TBA[1]	TBA[1]
Lady Ella Sediment Dam	Overflow of Sediment Dam	Surface runoff from Lady Ella WRD and ROM	Ephemeral stream reporting to Gin Creek	447235	7613038
Lady Ella Northern Sediment Dam	Overflow of Sediment Dam	Surface runoff from Lady Ella WRD	Ephemeral stream reporting to Maggies Creek	447758	7614063
Merlin Sediment Dam (ROM)	Overflow of Sediment Dam	Surface runoff from Merlin ROM	Ephemeral stream reporting to Gin Creek	446829	7605865
Merlin Sediment (North of WRD)	Overflow of Sediment Dam	Surface runoff from Merlin NAF WRD	Ephemeral stream reporting to Gin Creek	446941	7606093
Merlin SD (Paste Plant)	Overflow of Sediment Dam	Surface runoff from Merlin Paste Plant	Ephemeral stream reporting to Gin Creek	TBD[2]	TBD[2]
Merlin 1 Environment Dam (General Infrastructure)	Overflow of Environment Dam	Surface runoff from Merlin general infrastructure area and Paste Plant	Ephemeral stream reporting to Gin Creek	TBD[2]	TBD[2]
Merlin 2 Environment Dam	Overflow of Environment Dam	Surface runoff from Merlin ROM, Crusher and Concentrator	Ephemeral stream reporting to Gin Creek	TBD[2]	TBD[2]
Merlin 3 Environment Dam	Overflow of Environment Dam	Surface runoff from Merlin NAF WRD	Ephemeral stream reporting to Gin Creek	TBD[2]	TBD[2]

Release Point[3]	Description of Waste Water Release	Description of Source	Description of Receiving Waters	Release Point Location	
				Latitude (GDA94)	Longitude (GDA94)
276 Western Sediment Dam	Overflow of Sediment Dam	Surface runoff from 276 WRD	Ephemeral stream reporting to Gin Creek	445266	7604387
276 North-Western Sediment Dam	Overflow of Sediment Dam	Surface runoff from 276 WRD	Ephemeral stream reporting to Gin Creek	445382	7604582
257 Northern Sediment Dam	Overflow of Sediment Dam	Surface runoff from 257 WRD	Ephemeral stream reporting to Gin Creek	445455	7603182
257 North-Western Sediment Dam	Overflow of Sediment Dam	Surface runoff from 257 WRD	Ephemeral stream reporting to Gin Creek	445240	7603058
257 Western Sediment Dam	Overflow of Sediment Dam	Surface runoff from 257 WRD	Ephemeral stream reporting to Gin Creek	445109	7602711
251 Northern Sediment Dam	Overflow of Sediment Dam	Surface runoff from 251 WRD	Ephemeral stream reporting to Gin Creek	445443	7602279
251 North-Western Sediment Dam	Overflow of Sediment Dam	Surface runoff from 251 WRD	Ephemeral stream reporting to Gin Creek	445358	7602263
251 Southern Sediment Dam	Overflow of Sediment Dam	Surface runoff from 251 WRD	Ephemeral stream reporting to Gin Creek	445290	7601912
Lake Wyche	Overflow of freshwater dam	Surface water runoff from eastern catchment and mill site	Wyche West Creek (Ephemeral Creek), reporting to Gin Creek	445521	7600644
222 Northern Sediment Dam	Overflow of Sediment Dam	Surface runoff from 222 WRD	Wyche West Creek (Ephemeral Creek), reporting to Gin Creek	445202	7600376
222 Western Sediment Dam	Overflow of Sediment Dam	Surface runoff from 222 WRD	Ephemeral stream reporting to Gin Creek	444459	7599408
222 Southern Sediment Dam	Overflow of Sediment Dam	Surface runoff from 222 WRD	Ephemeral stream reporting to Gin Creek	444572	7598466
Victoria Sediment Dam	Overflow of Sediment Dam	Surface runoff from Victoria WRD	Ephemeral stream reporting to Mort River	445649	7591272
Mt Cobalt ML2732 boundary	Runoff from historic mining disturbance	Surface runoff from historic mining disturbance	Ephemeral stream reporting to Mort River	447780	7595861
Mt Dore South WRD Environment Dam	Overflow of Environment Dam	Surface runoff from Mt Dore south WRD	Ephemeral stream reporting to Mort River	TBA[1]	TBA[1]

Release Point[3]	Description of Waste Water Release	Description of Source	Description of Receiving Waters	Release Point Location	
				Latitude (GDA94)	Longitude (GDA94)
Mt Dore North WRD Environment Dam	Overflow of Environment Dam	Surface runoff from Mt Dore north WRD	Ephemeral stream reporting to Mort River	TBA[1]	TBA[1]
Mt Dore ROM Environment Dam	Overflow of Environment Dam	Surface runoff from Mt Dore ROM area	Ephemeral stream reporting to Mort River	TBA[1]	TBA[1]
Selwyn ROM Dam	Overflow of Sediment Dam	Surface runoff from Selwyn ROM	Ephemeral stream reporting to Gin Creek	445966	7602209
254 Sediment Dam 1	Overflow of Environment Dam	Surface runoff from 254 WRD	Ephemeral stream reporting to Gin Creek	445005	7603151
254 Sediment Dam 2	Overflow of Environment Dam	Surface runoff from 254 WRD	Ephemeral stream reporting to Gin Creek	444636	7602357
254 Sediment Dam 3	Overflow of Environment Dam	Surface runoff from 254 WRD	Ephemeral stream reporting to Gin Creek	444602	7601881
254 Sediment Dam 4	Overflow of Environment Dam	Surface runoff from 254 WRD	Ephemeral stream reporting to Gin Creek	444982	7601604

Notes:
1. TBA – The environmental authority holder must provide this detail/information, as well as updated plans and maps, to the administering authority by **1 July 2017**.
2. TBD – The environmental authority holder must provide this detail to the administering authority on completion of site layout plans.
3. Release points depicted in Schedule J – Plans 2 to 5

Schedule C - Table C2 (Release Water Contaminant Limits)

Quality Characteristic[7]	Contaminant Limit (mg/L unless otherwise specified)	Monitoring Frequency[8]
pH (pH units)	6.0[1] (minimum)	Event based sampling of release[5] or flow[6] events: ▪ One sample must be taken within 12 hours of a release event or flow event commencing. A second sample must be taken between 12 and 24 hours after the release event or flow event commences. ▪ Where a release event or a flow event has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter until release or flow event ceases.
	8.5[1] (maximum)	
EC (µS/cm)	210[2]	
Sulphate (SO_4^{2-}) (mg/L)	12[3]	
Turbidity (NTU)	250[1]	
Suspended Solids (mg/L)	500[3]	

Quality Characteristic[7]	Contaminant Limit (mg/L unless otherwise specified)	Monitoring Frequency[8]
Fluoride	0.2[3]	
Aluminium	0.94[3]	
Arsenic[4]	0.013[1]	
Boron	0.94[1]	
Cadmium	0.0002[1]	
Chromium[4]	0.001[1]	
Cobalt	0.0034[3]	
Copper	0.015[3]	
Iron	1.325[3]	
Lead	0.09[3]	
Manganese	1.9[1]	
Mercury (inorganic)	0.0006[1]	
Molybdenum	0.034[1]	
Nickel	0.011[1]	
Rhenium	0.06[3]	
Selenium (Total)	0.005[1]	
Silver	0.001[3]	
Uranium	0.0005[1]	
Zinc	0.015[1]	
Hardness	For the purpose of interpretation, particularly in regard to metals analysis	
Cyanide (free)[9]	For the purpose of interpretation	
Cyanide (WAD)[9]	For the purpose of interpretation	

Notes:

1. ANZG, 2018
2. Contaminant trigger based on Lake Eyre 75th percentile for the Central region of the Cloncurry mines.
3. Site Specific value derived using data provided by the environmental authority holder in 2021.
4. Analysis is based on total/combined species of the element, where the trigger level is exceeded, an analysis to determine and quantify speciated forms of the element is required.
5. Release event is a surface water release from water storages or contaminated areas on the licensed place.
6. Flow events is a surface water flow that occurs as a result of rainfall.
7. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered).
8. The requirement to continue sampling release or flow events with a duration of 24hrs or greater is only required if there are exceedances at the release points with the receiving water contaminant trigger levels listed in Table C2.
9. Determination of Cyanide levels is only required for Lake Wyche and only if the contaminant limit is exceeded for an onsite water storage monitoring location or groundwater monitoring location of the Eastern TSF or Heap Leach.

(C4) The volume of all water released to waters from each of the locations specified in Schedule C - Table C1 (Contaminant Release Points) must be determined and recorded.

(C5) The release of contaminants to waters must not exceed the contaminant limits specified in Schedule C - Table C2 (Release Water Contaminant Limits) for each parameter.

(C6) If quality characteristics of the release exceed any of the trigger levels specified in Schedule C - Table C2 (Release Water Contaminant Limits) during a release event, the holder of this environmental authority must compare the downstream results in the receiving waters during that release event to the trigger values specified in Schedule C - Table C2 (Release Water Contaminant Limits) and:

(a) If the level of contaminants at the downstream site is the same or a lower value than the reference value for the quality characteristic during the release event then no action is to be taken; or

(b) If the level of contaminants at the downstream site is greater than the reference monitoring site data complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority within 3 months, outlining:

(i) details of the investigations carried out; and,

(ii) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with requirement (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

(C7) The release of contaminants to receiving waters must not result in any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter nor have any other properties nor contain any organisms or other contaminants in concentrations that are capable of causing environmental harm.

(C8) Waters from areas potentially contaminated by oils and grease such as workshops and fuel storage areas must be effectively treated in a coalescing plate separator or equivalent prior to being placed in any location from which they may be released to waters.

(C9) The release of waters must not cause erosion of the bed or banks of the receiving waters or result in deposition of sediment.

Stream Flow Monitoring

(C10) The environmental authority holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations specified in Schedule C - Table C3 (Stream Flow

Gauging Stations) and identified in Schedule J - Plan 5 (Stream Flow Gauging Station) for any receiving water into which a release occurs.

*Note: the environmental authority holder must provide Schedule J – Plan 6 (Stream Flow Gauging Station/s) in a form and by the means acceptable to the administering authority by **8 September 2017**.*

Schedule C - Table C3 (Stream Flow Gauging Stations)

Receiving water description	Gauging station description	Latitude (GDA94)	Longitude (GDA94)	Flow recording Frequency
Tributary of Gin Creek	Gauging station RSS21a	443277	7600692	Continuous recording during flow events

(C11) During all release events, the volume of natural flow in receiving waters must be monitored immediately downstream of each release location specified in Schedule C - Table C1 (Contaminant Release Points) in a manner that ensures at a minimum:

(a) Stream flow in receiving waters is measured at the commencement of, during and following any release event till such time as flow in the receiving water ceases; and,

(b) Flow volume is determined at a level of accuracy that enables calculation of contaminant load in the receiving water for all contaminants listed in Schedule C - Table C4 (Receiving Waters Monitoring Locations and Frequency).

(C12) In the event that the methodology for calculating stream flow in receiving waters adopted to comply with condition (C11) is deemed to be unacceptable to the administering authority, the environmental authority holder will be required to install, operate and maintain gauging stations for all contaminant release points listed in Schedule C - Table C1 (Contaminant Release Points) before commencing any release to receiving waters from those locations.

(C13) Notwithstanding any other condition of this environmental authority, the release of contaminants to waters must only take place during natural flow events when the background receiving water flow comprises a minimum of 95% of the total volume of the release.

Receiving Environment Monitoring

(C14) The quality of the receiving waters must be monitored at the locations and frequencies defined in Schedule C - Table C4 (Receiving Waters Monitoring Locations and Frequency).

Schedule C - Table C4 (Receiving Waters Monitoring Locations and Frequency)

Monitoring Point[4]	Description	Co-ordinates (MGA GDA94)		Monitoring frequency
		Latitude	Longitude	
Receiving Waters				Daily during water release (the first sample must be taken within 2 hours of the commencement of release)
RSS4a	Stream leaving 222 pit area near southern boundary of ML2733	444048	7598501	
RSS12	Stream leaving Mt Elliott Area near southern boundary of ML2736	448817	7617316	
RSS18	Stream leaving main mining area, west of western boundary of ML2733	443136	7599817	

Monitoring Point[4]	Description	Co-ordinates (MGA GDA94)		Monitoring frequency
		Latitude	Longitude	
RSS21a	Stream leaving main mining area south of southern boundary of ML2745	443278	7600691	
Gauging Station 1	Wyche West Creek	TBA[2]	TBA[2]	
RSS24	Stream leaving area downstream of tailings dam, south of southern boundary of ML2694 and Mt Dore North WRD, North Pit, South Pit and South WRD.	448898	7603123	
RSS26	Stream leaving Victoria mine area	445714	7591145	
RSS276	Stream leaving Area 276	445349	7604470	
RSS28	Stream leaving Lady Ella mine area	446881	7612050	
MLD-1	Stream leaving Merlin mine area	446332	7606304	
TBA[3]	Stream leaving Mt Dore heap leach plant surrounds	TBA[2]	TBA[2]	
Reference Sites[1]				
BS01 - Pyramid	Catchment upstream of Lake Wyche undisturbed by mining activities	446413	7600581	
Blackback	Reference site for the Mt Dore Line - Mineralised catchment not disturbed by mining activities	446531	7611422	
Amethyst	Reference site for the Starra Line - Mineralised catchment not disturbed by mining activities	443432	7608596	
Central	Reference site for the Mt Elliot area - Mineralised catchment not disturbed by mining activities	448258	7618990	
Mort River	Background site for the Mort River downstream	TBA[2]	TBA[2]	
TBA[3]	Mt Dore Heap Leach Project ephemeral steams	TBA[2]	TBA[2]	

Notes:

1 Reference sites must:
- a) be from the same bio-geographic and climatic region; and
- b) have similar geology, soil types and topography; and
- c) contain a range of habitats similar to those at the test sites; and
- d) have a similar flow regime; and
- e) not be so close to the test sites that any disturbance at the test site also results in a change at the reference site

2. TBA To be provided to the administering authority by **1 July 2017**.
3. Monitoring points depicted in Schedule J Plans 2-5

(C15) If quality characteristics of the receiving water at the downstream monitoring locations exceed any of the trigger levels specified in Schedule C - Table C5 (Receiving Water Contaminant Trigger Levels) during a release event, the environmental authority holder must compare the results of the downstream site to the data from reference monitoring sites and:

(a) If the level of contaminants at the downstream site does not exceed the reference monitoring site data, then no action is to be taken; or,

(b) if the level of contaminants at the downstream site is greater than the reference monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ (2000) methodology, into the potential for environmental harm and provide a written report to the administering authority within three (3) months, outlining:

(i) Details of the investigations carried out; and,

(ii) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with requirement (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three-month investigation period.

(C16) Receiving waters must be monitored for all quality characteristics listed in Schedule C - Table C5 (Receiving Water Contaminant Trigger Levels).

Schedule C - Table C5 (Receiving Water Contaminant Trigger Levels)

Quality Characteristic[4]	**Trigger Levels (µg/L unless otherwise specified)**	**Monitoring Frequency**
pH (pH units)	6.0[1] (minimum)	Event based sampling of release[6] or flow[7] events: ▪ One sample must be taken within 12 hours of a release event or flow event commencing. A second sample must be taken between 12 and 24 hours after the release event or flow event commences. ▪ Where a release event or a flow event has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter until release or flow event ceases.
	8.5[1] (maximum)	
EC (µS/cm)	210[2]	
Sulphate (SO_4^{2-}) (mg/L)	12[3]	
Turbidity (NTU)	250[1]	
Suspended Solids (mg/L)	500[3]	
Fluoride	0.2[3]	
Aluminium – Dissolved	0.94[3]	
Arsenic[8] - Dissolved	0.013[1]	
Boron - Dissolved	0.94[1]	
Cadmium – Dissolved	0.0002[1]	
Chromium[8] - Dissolved	0.001[1]	
Cobalt - Dissolved	0.0034[3]	

Quality Characteristic[4]	Trigger Levels (µg/L unless otherwise specified)	Monitoring Frequency
Copper - Dissolved	0.015[3]	
Iron - Dissolved	1.325[3]	
Lead – Dissolved	0.09[3]	
Manganese - Dissolved	1.9[1]	
Mercury (inorganic) - Dissolved	0.0006[1]	
Molybdenum – Dissolved	0.034[1]	
Nickel – Dissolved	0.011[1]	
Rhenium	0.06[3]	
Selenium (Total) – Dissolved	0.005[1]	
Silver - Dissolved	0.001[3]	
Uranium - Dissolved	0.0005[1]	
Zinc - Dissolved	0.015[1]	
Hardness	For the purpose of interpretation, particularly in regard to metals analysis	
Cyanide (free)[9]	0.007[1]	
Cyanide (WAD)[9]	For the purpose of interpretation	

Notes:

1. ANZG, 2018
2. Contaminant trigger based on Lake Eyre 75th percentile for the Central region of the Cloncurry mines.
3. Site Specific value derived using data provided by the environmental authority holder in 2021.
4. Analysis is based on total/combined species of the element, where the trigger level is exceeded, an analysis to determine and quantify speciated forms of the element is required.
5. Release event is a surface water release from water storages or contaminated areas on the licensed place.
6. Flow events is a surface water flow that occurs as a result of rainfall.
7. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered).
8. Analysis is based on total/combined species of the element, where the trigger level is exceeded, an analysis to determine and quantify speciated forms of the element is required.
9. Determination of Cyanide levels is only required for Lake Wyche and only if the contaminant limit is exceeded for an onsite water storage monitoring location or groundwater monitoring location of the Eastern TSF or Heap Leach.

Stream Sediment Contaminant Levels

(C16) Sediment quality of receiving waters and reference waters must be monitored twice a year (once at the end of the wet season and once at the end of the dry season)* at the monitoring locations defined in Schedule C - Table C4 (Receiving Waters Monitoring Locations and Frequency) and identified in

Schedule J – Plans 2 to 5 for the parameters defined in Schedule C - Table C6 (Stream Sediment Trigger Levels and Contaminant Limits).

*If no contaminant release has occurred in the previous 12 months, sediment sampling frequency can be reduced to once per year, to be undertaken at the end of the dry season.

(C17) If the quality characteristics of sediments exceed any of the trigger levels specified in Schedule C - Table C6 (Stream Sediment Trigger Levels and Contaminant Limits), the environmental authority holder must compare the results of the downstream site to the data from reference monitoring sites and:

(a) if the level of contaminants at the downstream site does not exceed the reference monitoring site data, then no action is to be taken; or

(b) if the level of contaminants at the downstream site is greater than the reference monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ (2000) methodology, into the potential for environmental harm and provide a written report to the administering authority within three (3) months, outlining:

(i) details of the investigations carried out; and,

(ii) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with requirement (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three-month investigation period.

(C18) Sediment contaminant levels must not exceed the sediment contaminant limits stated in Schedule C - Table C6 (Stream Sediment Trigger Levels and Contaminant Limits).

Schedule C - Table C6 (Stream Sediment Trigger Levels and Contaminant Limits)

Parameter	Unit	Trigger Level	Contaminant Limit
Arsenic	mg/kg	Reference value[2] or 20[3], whichever is higher	70[1] or twice the reference value[2], whichever is higher
Bismuth	mg/kg	Reference value[2]	Three times the reference value[2]
Boron	mg/kg	Reference value[2]	Three times the reference value[2]
Cadmium	mg/kg	Reference value[2] or 1.5[3], whichever is higher	10[1] or three times the reference value[2], whichever is higher
Chromium	mg/kg	Reference value[2] or 80[3], whichever is higher	370[1] or three times the reference value[2], whichever is higher
Cobalt	mg/kg	Reference value[2]	Three times the reference value[2]
Copper	mg/kg	Reference value[2] or 65[3], whichever is higher	270[1] or three times the reference value[2], whichever is higher
Lead	mg/kg	Reference value[2] or 50[3], whichever is higher	220[1] or three times the reference value[2], whichever is higher
Manganese	mg/kg	Reference value[2]	Three times the reference value[2]
Mercury	mg/kg	Reference value[2] or 0.15[3], whichever is higher	1[1] or three times the reference value[2], whichever is higher

Parameter	Unit	Trigger Level	Contaminant Limit
Molybdenum	mg/kg	Reference value[2]	Three times the reference value[2]
Nickel	mg/kg	Reference value[2] or 21[3], whichever is higher	52[1] or three times the reference value[2], whichever is higher.
Rhenium	mg/kg	Reference value[2]	Three times the reference value[2]
Selenium	mg/kg	Reference value[2]	Three times the reference value[2]
Silver	mg/kg	Reference value[2] or 1[3], whichever is higher	3.7[1] or three times the reference value[2], whichever is higher.
Tin	mg/kg	Reference value[2]	Three times the reference value[2]
Uranium	mg/kg	Reference value[2]	Three times the reference value[2]
Zinc	mg/kg	Reference value[2] or 200[3] or, whichever is higher	410[1] or three times the reference value[2], whichever is higher.

Notes:

1. ANZECC (2000) Interim Sediment Quality Guidelines – high values based on total sediments
2. Reference sites are defined in Schedule C - Table C4 (Receiving Waters Monitoring Locations and Frequency).
3. ANZECC (2000) Interim Sediment Quality Guidelines – low values based on total sediments

Receiving Environment Monitoring Program (REMP)

(C19) A REMP must be developed and implemented to monitor and record the effects of the release of contaminants in the receiving environment periodically and whilst contaminants are being discharged from the site, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority.

For the purposes of the REMP, the receiving environment is all underlying groundwaters, the waters of Maggies Creek, Gin Creek, the Mort River and any connected waterways that are downstream of a release point/s listed in Schedule C - Table C1 (Contaminant Release Points) of this environmental authority.

(C20) The REMP must address (but not necessarily be limited to) the following:

(a) Description of potentially affected receiving environment including relevant watercourses, background water quality characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality) and the hydrogeology of all relevant groundwaters;

(b) Description of applicable environmental values and water quality objectives to be achieved (i.e. as scheduled pursuant to the *Environmental Protection (Water) Policy 2009*);

(c) Any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed;

(d) Water quality objectives within the receiving environment to be achieved, and clarification of contaminant concentrations or level indicating adverse environmental impacts during the REMP;

(e) Monitoring for any potential adverse environmental impacts caused by the release;

(f) Monitoring of stream flow and hydrology;

(g) Monitoring of toxicants should consider the indicators specified in Schedule C - Table C2 (Release Water Contaminant Limits) to assess the extent of the compliance of concentrations with water quality objectives and/or the ANZECC & ARMCANZ 2000 guidelines for slightly to moderately disturbed ecosystems;

(h) Monitoring as a minimum the parameters specified in Schedule C - Table C2 (Release Water Contaminant Limits) (in addition to dissolved oxygen saturation and temperature);

(i) Monitoring biological indicators (for macroinvertebrates in accordance with the AusRivas methodology / the latest edition of the Administering Authority's monitoring and sampling manual) and metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 *Guidance on Sampling of Bottom Sediments*) for permanent, semi-permanent water holes and water storages;

(j) The locations of monitoring points, including reference and compliance sites, for all areas potentially impacted by activities authorised by this environmental authority. Reference sites must comply with the following criteria:

(i) be from the same bio-geographic and climatic region;

(ii) have similar geology, soil types and topography;

(iii) contain a range of habitats similar to those at the potentially impacted sites;

(iv) have a similar flow regime; and

(v) not be so close to the potentially impacted sites that any disturbance at the potentially

(vi) impacted sites also results in a change at the reference site;

(k) The frequency or scheduling or sampling and analysis sufficient to determine water quality objectives and to derive site specific reference values within 3 years (depending on wet season flows) in accordance with the latest edition of the Administering Authority's *Queensland Water Quality Guidelines*. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges;

(l) Specify sampling and analysis methods and quality assurance and control;

(m) Any historical datasets to be relied upon;

(n) Description of the statistical basis on which conclusions are drawn; and

(o) Any spatial and temporal controls to exclude potential confounding factors.

(C21) A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with condition (C20) must be prepared and submitted in writing to the administering authority by **30 June 2022** and thereafter every 12 months. This report must include an assessment of:

(a) Any assimilative capacity for those contaminants monitored;

(b) The suitability of current release limits to protect downstream environment values;

(c) If current release limits are identified as unsuitable to protect downstream environmental values, provide recommendations for more appropriate contaminant limits.

Groundwater

(C22) The holder of this environmental authority must not release contaminants, directly or indirectly, to groundwater.

(C23) Groundwater quality and standing water level must be monitored:

(a) at the locations and frequencies defined in Schedule C - Table C7 (Groundwater Monitoring Locations and Frequency) and identified in Schedule J – Plans 2 to 5.

(b) for quality characteristics listed in Schedule C - Table C8 (Groundwater Contaminant Limits).

Schedule C - Table C7 (Groundwater Monitoring Locations and Frequency)

Monitoring Bore	Hydrogeological unit	Location description	Location (decimal degrees*, GDA2020)		Surface RL (mAHD)	Screen depth (m)	Monitoring Frequency
			Latitude	Longitude			
Compliance Bore							
MEMB3	Staveley Formation	Mount Elliott Mine	448259	7617294	381.82	30-60	Quarterly
MB2a	Kuridala Group	Downstream from Eastern Tailings Dam	447370	7602595	356.36	20-40	
MB3	Staveley Formation*	Eastern Tailings Dam	446417	7601998	357.41	28-40	
MB4	Staveley Formation*	Eastern Tailings Dam	446316	7601957	354.13	28-40	
MB5	Staveley Formation*	Eastern Tailings Dam	446327	7601594	358.98	28-40	
MB6	Staveley Formation*	Mill site	445840	7601551	347.3	26-38	
MB7	Kuridala Group	N of Southern Tailings Dam	446482	7600488	345.72	30-50#	
MB8	Kuridala Group	SE of Eastern Tailings Dam	446953	7601276	362.91	20 – 40#	
MB9	Kuridala Group	E of Eastern Tailings Dam	447277	7601973	363.04	20 – 40#	
MB10	Kuridala Group	N of Eastern Tailings Dam	447618	7603099	351.63	15 – 30#	
MB11	Gin Creek Granite	Downstream of Starra 254 WRD	444848	7601863	343.74	16-28	
MB12	Double Crossing Metamorphics	Downstream of Starra 254 WRD	444825	7602377	346.71	33-42	
MB244	TBA[3]	TBA[3]	TBA[3]	TBA[3]	TBA[3]	TBA[3]	
MB257	TBA[3]	TBA[3]	TBA[3]	TBA[3]	TBA[3]	TBA[3]	
MDHLMB1	Staveley Formation*	Down gradient of Mt Dore North WRD	447755	7606481	375.41	3.5-5	
MDHLMB2	Staveley Formation*	Down gradient of Mt Dore North WRD	447657	7605795	362.48	3.5-5	
MDHLMB3	Staveley Formation*	Down gradient of Mt Dore West WRD	446883	7605150	370.96	3.5-5	
MDHLMB4	Staveley Formation*	Down gradient of Mt Dore ROM and South WRD	446778	7604356	356.11	3.5-5	

Monitoring Bore	Hydrogeological unit	Location description	Location (decimal degrees*, GDA2020)		Surface RL (mAHD)	Screen depth (m)	Monitoring Frequency
			Latitude	Longitude			
MDHLMB5	Staveley Formation*	Down gradient of Mt Dore Heap Leach & Process Ponds	446461	7604315	362.52	3.5-5	
MDHLMB7	Staveley Formation*	Down gradient of Mt Dore Heap Leach & Process Ponds	446260	7603158	365.92	3.5-5	
MDHLMB8	Staveley Formation*	Down gradient of Mt Dore Heap Leach & Process Ponds	446506	7604445	361.24	24-30	
MDHLMB9	Staveley Formation*	Down gradient of Mt Dore Heap Leach & Process Ponds	446244	7603049	364.37	24-30	
MDHLMB10	Staveley Formation*	Downgradient of Mt Dore North and South Pit	447748	7604214	348.02	49-55	
MDWB10	Mt Dore Granite, Kuridala Group*	Mount Dore North	TBA[3]	TBA[3]	358.36	64-190	
MDWB12a	Kuridala Group*	Mount Dore Aquifer	448477	7603235	339.74	22-60	
MLMB-1 (MDQ383)	Staveley Formation	Downstream of Merlin area	446784	7606244	375.93	TBA[3]	
STDMB1	Staveley Formation*	Southern Tailings Dam	445655	7599272	351.83	28-40	
STDMB2	Kuridala Group*	Southern Tailings Dam	445801	7598973	358.94	28-40	
STDMB3	Kuridala Group*	Southern Tailings Dam	446205	7599936	361.46	28-40	
STDMB5	Staveley Formation	Southern Tailings Dam	445683	7599270	349.21	75-90	
Interpretation Bore							
MERB1	Contact between Kuridala Group and Hampden Slate	Mount Elliot	447447	7619909	396.5	14-92	
LLMB1	Staveley Formation	Lucky Luke	440566	7589063	300.60	TBA[3]	
Mort River	Kuridala Group	Mort River	452677	7600388	319.11	4.5-62	

Notes:

1. RL must be measured to the nearest 5cm from the top of the bore casing
2. Decimal Degrees must be provided to a minimum of 5 decimal places
3. TBA details to be provided to the administering authority in the form of an application for an amendment to this EA under the *Environmental Protection Act, 1994* no later than 30 September 2022.

*Inferred stratigraphy.
#Information is from bore specifications.

(C24) Groundwater measured from any compliance bore specified in Table C7 - Groundwater monitoring locations and frequency must not exceed the corresponding Limit A specified in Table C8 - Groundwater Contaminant Limits on any five (5) consecutive sampling occasions.

(C25) Groundwater measured from any compliance bore specified in Table C7 - Groundwater monitoring locations and frequency must not exceed the corresponding Limit B specified in Table C8 - Groundwater Contaminant Limits on any three (3) consecutive sampling occasions.

Schedule C - Table C8 (Groundwater Contaminant Limits)

Quality Characteristic	Units	Limit A[1]	Limit B[1]	Monitoring bore
pH	pH units	-	6.0 - 8.5[2]	All bores
EC	µS/cm	3141	3345	MB2a
		3594	3925	MB3
		2972	3055	MB4
		5901	6243	MB5
		4460	4728	MB6
		TBA	TBA	MB7
		TBA	TBA	MB8
		TBA	TBA	MB9
		TBA	TBA	MB10
		TBA	TBA	MB11
		TBA	TBA	MB12
		1050	1309	MDWB10
		3390	3590	MDWB12a
		8484	9127	MEMB3
		1745	1897	MLMB-1 (MDQ383)
		TBA	TBA	STDMB1
		TBA	TBA	STDMB2
		TBA	TBA	STDMB3
		TBA	TBA	STDMB5
Sulphate (SO_4^{2-})	mg/L	768	805	MB2a
		438	470	MB3
		380	402	MB4
		720	785	MB5
		560	591	MB6
		TBA	TBA	MB7
		TBA	TBA	MB8
		TBA	TBA	MB9
		TBA	TBA	MB10
		TBA	TBA	MB11
		TBA	TBA	MB12
		160	219	MDWB10
		1100	1200	MDWB12a
		2000	2100	MEMB3

Quality Characteristic	Units	Limit A[1]	Limit B[1]	Monitoring bore
Sulphate (SO_4^{2-})	mg/L	49	123	MLMB1 – MDQ383
		TBA	TBA	STDMB1
		TBA	TBA	STDMB2
		TBA	TBA	STDMB3
		TBA	TBA	STDMB5
Fluoride	mg/L	-	2	All bores, except MDWB16
	mg/L	-	5.2	MDWB16
Aluminium	µg/L	-	55[1]	All bores
Arsenic	µg/L	13[1]	20	All bores, except MDWB10
	µg/L	0.062	0.083	MDWB10
Boron	µg/L	-	370[1]	All bores, except MDWB10
	µg/L	-	0.079	MDWB10
Cadmium	µg/L	0.2[1]	0.4	All bores
Chromium	µg/L	3	4	All bores, except MB5 and MDWB10
	µg/L	19	21	MB5
	µg/L	-	0.001	MDWB10
Cobalt	µg/L	2	5	All bores, except MB2a, MDWB10, and MEMB3
	µg/L	84	90	MB2a
	µg/L	0.027	0.076	MDWB10
	µg/L	12	17	MEMB3
Copper	µg/L	10	15	All bores except MDWB10
	µg/L	0.008	0.063	MDWB10
Iron	µg/L	300[2]	400	All bores, except MDWB10 and MDWB12a
	µg/L	1.150	1.536	MDWB10
	µg/L	1220	1300	MDWB12a
Lead	µg/L	-	3.4[2]	All bores
Manganese	µg/L	-	1900[2]	All bores
Molybdenum	µg/L	34[2]	60	All bores, except MDWB10
	µg/L	-	0.030	MDWB10
Nickel	µg/L	-	11[2]	All bores, except MDWB10
	µg/L	0.014	0.025	MDWB10
Selenium	µg/L	10	14	All bores, except MDWB10
	µg/L	-	0.010	MDWB10
Uranium	µg/L	80	120	All bores, except MB5 and MDWB10
	µg/L	-	0.023	MDWB10
	µg/L	240	270	MB5
Zinc	µg/L	26	40	All bores, except MDWB10
	µg/L	0.900	1.440	MDWB10
Cyanide (free)	mg/L	-	0.5	All bores
Major ions (calcium, chloride, potassium, magnesium, sodium, bicarbonate)	mg/L	For interpretation		
Hardness	mg/L	For interpretation		
Cyanide (WAD)	mg/L	For interpretation		

Notes:
1. Where no footnote exists for value in column, this relates to a Site-Specific limit derived using site specific data provided by the environmental authority holder in 2021.

2. Default toxicant ANZG 2018
3. TBA details to be provided to the administering authority in the form of an application for an amendment to this EA under the *Environmental Protection Act, 1994* no later than **30 September 2022**.

(C26) The construction, maintenance, operation and management of groundwater monitoring bores must be undertaken in a manner that prevents contaminants entering the environment and ensures the integrity of the bores to obtain representative groundwater samples from the target hydrogeological unit.

(C27) By **30 September 2022**, An Annual Groundwater Monitoring Report (AGMR) is required to be developed by an appropriately qualified person and implemented and maintained by the environmental authority holder and submitted to the administering authority upon request.

(C28) The Annual Groundwater Monitoring Report required by condition (C27) must include:

(a) the groundwater quality and standing water level of all groundwater bores listed within Schedule C - Table C7 (Groundwater Monitoring Locations and Frequency); and

(b) detect any impacts to groundwater levels due to the activity; and

(c) detect any impacts to groundwater quality due to the activity; and

(d) an assessment of long-term water quality and water level trends at all groundwater bores listed in Schedule C - Table C7 (Groundwater Monitoring Locations and Frequency); and

(e) details of any review undertaken of the groundwater conceptual model; and

(f) Comparison with receiving environment surface water quality monitoring results to determine any interaction or impact from groundwater on surface water; and

(g) include a review process to identify improvements to the program that includes addressing any comments provided by the administering authority.

(C29) From **30 September 2021**, A bore drill log must be kept for each compliance and observation groundwater monitoring bore which includes:

(a) bore identification reference and geographic coordinate location;
(b) specific construction information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details;
(c) standing groundwater level and water quality characteristics including physical characteristics and results of laboratory analysis for the possible trigger characteristics;
(d) lithological data and stratigraphic interpretation by an appropriately qualified person to identify important features associated with groundwater monitoring; and
(e) target hydrogeological feature of the bore.

(C30) Monitoring and sampling must be carried out in accordance with written procedures and must address the requirements of the latest version of the following documents unless otherwise approved by the administering authority:

(a) for waters and aquatic environments, Monitoring and Sampling Manual: Environmental Protection (Water) Policy, (Department of Environment and Science 2018).
(b) for groundwater, Groundwater Sampling and Analysis – A Field Guide (2009:27 GeoCat#6890.1) and Australian Standard AS/NZS 5667.11:1998 Water quality—Sampling -Part 11: Guidance on sampling of groundwaters;
(c) for subterranean aquatic fauna, the Guideline for the Environmental Assessment of Subterranean Aquatic Fauna (Queensland Herbarium, DSITI December 2015).

(C31) Any TBA details in Schedule C – Table C7 (Groundwater Monitoring Locations and Frequency) or Schedule C - Table C8 (Groundwater Contaminant Limits) must be provided to the administering authority in the form of an application for an amendment to this EA under the *Environmental Protection Act, 1994* no later than **30 September 2022**.

Sewage Treatment

(C32) Sewage effluent must only be released to land within the nominated areas identified in Schedule C - Table C9 (Sewage Effluent Release Points, Method and Volume) of this environmental authority.

(C33) Sewage effluent releases must be consistent with the release method and peak daily discharge specified in Schedule C - Table C9 (Sewage Effluent Release Points, Method and Volume) of this environmental authority.

Schedule C - Table C9 (Sewage Effluent Release Points, Method and Volume)

Release Point	Release Method	Contaminant Source	Peak Daily Discharge to Land (m^3)	Release Point / Monitoring Location	
				Easting (MGA94)	Northing (MGA94)
Septic Systems					
DTQ Workshop	Sub-surface trench discharge of effluent	Workshop Septic	2	446120	7601711
Core Shed		Core Shed Septic	2	448258	7603720
Mt Elliott		Exploration Septic	1	447734	7617380
Sewage Treatment Systems					
Selwyn Precinct STP Site	Surface irrigation of treated effluent & discharge via pipeline to Southern Tailings Dam	Selwyn Precinct STP	Nil	N/A	N/A
Merlin STP	Discharge via pipeline to Southern Tailings Dam	Merlin Mine STP	Nil	TBA[1]	TBA[1]
222 STP	Discharge via pipeline to Southern Tailings Dam	Workshop / Offices	Nil	N/A	N/A

Notes:

1. TBA - Monitoring location to be at plant discharge connection with pipeline to Southern Tailings Dam and to be advised when system is installed.

(C34) Treated sewage effluent must only be released in accordance with the contaminant limits stated in Schedule C - Table C10 (Contaminant Release Limits to Land) (for Sewage Treatment Systems only) and the conditions of this environmental authority.

Schedule C - Table C10 (Contaminant Release Limits to Land)

Contaminant	Unit	Release limit	Limit type	Frequency
5-day Biochemical oxygen demand (BOD)[1]	mg/L	20	Maximum	Quarterly
Total Suspended Solids	mg/L	30	Maximum	Quarterly
Nitrogen	mg/L	30 10 5	Maximum 50th percentile short term 50th percentile long term	Quarterly
Phosphorus	mg/L	15 8 5	Maximum 50th percentile short term 50th percentile long term	Quarterly
E coli	Organisms / 100ml	200	Maximum	Quarterly
Faecal Coliforms[1]	CFU / 100ml	1000	Maximum	Quarterly
pH	pH units	6.0 - 8.5	Range	Quarterly

Notes:

1. Based on at least 5 but no more than 10 consecutive samples.

(C35) The following minimum areas of land must be utilised for the irrigation of treated sewage effluent, excluding any necessary buffer zones:

(a) One (1) hectare for the Camp STP Site.

(C36) The environmental authority holder must take all necessary measures to ensure that persons are not exposed to pathogens in treated sewage effluent, including:

(a) Selection of irrigator equipment with low exposure risk;

(b) Appropriate timing of irrigation;

(c) Restriction of access to areas either being irrigated or that are freshly irrigated;

(d) Buffers between irrigation areas and areas of human occupation;

(e) Monitoring relevant groundwater quality indicators from any potentially affected bores;

(f) Use of appropriate withholding periods for livestock grazing;

(g) Notices prominently displayed on areas undergoing wastewater irrigation, warning the public/personnel that the area is irrigated with treated wastewater and not to use or drink the waste water;

(h) Lockable valves or removable handles must be fitted to all treated wastewater release pipes situated in public access areas.

(C37) Sewage effluent must only be dispersed to land in accordance with the following outcomes:

(a) Efficient application of effluent utilising best practice methods;

(b) Control of sodicity in the soil;

(c) Minimal degradation of soil structure;

(d) Control of the build-up of nutrients and heavy metals in the soil and subsoil from effluent and other sources;

(e) Prevention of subterranean flows of effluent to waters;

(f) Prevention of impacts on the groundwater resource through infiltration;

(g) Prevention of the run-off of effluent by limitation of application rates and the use of structures such as water dams;

(h) Prevention of surface ponding;

(i) Prevention of spraydrift or overspray from effluent disposal areas;

(j) Prevention of damage to native vegetation;

(k) Provide prominent signage, in areas irrigated with effluent and which are accessible to the general public, advising that effluent should not be consumed or used;

(l) Maximise health and safety protection in relation to effluent handling and irrigation;

(m) Identification of the irrigation area.

(C38) When circumstances prevent the irrigation or beneficial reuse of treated sewage effluent in accordance with the conditions of this environmental authority, it must be directed to a wet weather storage facility or alternative measures taken to lawfully dispose of it.

(C39) The daily volume of contaminants released to land from sewage systems must be determined by an appropriate method, with an accuracy of plus or minus 5%, for example a flow meter and records kept of such determinations and estimates.

Annual Water Monitoring Reporting

(C40) The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority:

(a) The date on which the sample was taken;

(b) The time at which the sample was taken;

(c) The monitoring point at which the sample was taken;

(d) The measured or estimated daily quantity of the contaminants released from all release points;

(e) The release flow rate at the time of sampling for each release point; and

(f) The results of all monitoring and details of any exceedances with the conditions of this environmental authority.

Water Management Plan

(C41) A Water Management Plan must be developed by an appropriately qualified person and implemented.

(C42) Each year the environmental authority holder must undertake a review of the Water Management Plan prior to the wet season (i.e. no later than 1 November) and a further review following the wet season (i.e. by 1 May the following year) to ensure that proper and effective measures, practices or procedures are in place so that operations are in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.

Erosion and Sediment Control

(C43) An Erosion and Sediment Control Plan (ESCP) must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.

(C44) By 1 November each year, the ESCP must be updated and implemented to include all disturbed areas.

END OF CONDITIONS FOR SCHEDULE C

Schedule D – Regulated Structures

General

(D1) The following regulated structures must be consistent with the basic details in Schedule D - Table D1 (Basic Details of Regulated Structures) below.

Schedule D - Table D1 (Basic Details of Regulated Structures)

Name of regulated structure	Hazard category	Maximum surface area of dam (ha)	Maximum volume of dam (m^3)	Maximum depth of dam (m)	Use of structure
Starra Pit 244	TBA[1]	TBA[1]	TBA[1]	TBA[1]	Storage of tailings and PAF waste rock
Starra Pit 257	TBA[1]	TBA[1]	TBA[1]	TBA[1]	Storage of tailings and PAF waste rock
Starra Pit 254	TBD[2]	TBD[2]	TBD[2]	TBD[2]	Storage of tailings and PAF waste rock
Eastern TSF	High	39	TBA[1]	TBA[1]	Storage of tailings from previous mining activities
Southern TSF	High	49	1,690,621	TBA[1]	Storage of tailings and site water management
Process Pond 1	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]
Process Pond 2	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]
Process Pond 3	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]
Process Pond 4	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]
Process Pond 5	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]
ROM Dam	TBA[1]	1	TBA[1]	TBA[1]	TBA[1]
WRD Dam 1	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]
WRD Dam 2	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]
Stormwater Pond	TBA[1]	TBA[1]	TBA[1]	TBA[1]	TBA[1]

Notes:

1. TBA – to be provided to the administering authority by **1 July 2017.**
2. TBD – details to be provided to the administering authority in the form of an application for an amendment to this EA under the Environmental Protection Act, 1994 no later than **30 September 2022**.

(D2) The following regulated structures must meet the hydraulic performance criteria specified in Schedule D - Table D2 (Hydraulic Performance of Regulated Structures).

Schedule D - Table D2 (Hydraulic Performance of Regulated Structures)

Name of regulated structures	Spillway capacity or diversion capacity (AEP)	Design storage allowance (AEP)	Mandatory reporting level (AEP)
Starra Pit 244	TBD[1]	TBD[1]	TBD[1]
Starra Pit 257	TBD[1]	TBD[1]	TBD[1]
Eastern TSF	1:1000 year wet season	1:10 year 2 month wet season	1:100 year 72 hour storm

Southern TSF	1:1000 year wet season	1:10 year 2 month wet season plus inputs from groundwater dewatering	1:100 year 72 hour storm
Process Pond 1	TBA[2]	TBA[2]	TBA[2]
Process Pond 2	TBA[2]	TBA[2]	TBA[2]
Process Pond 3	TBA[2]	TBA[2]	TBA[2]
Process Pond 4	TBA[2]	TBA[2]	TBA[2]
Process Pond 5	TBA[2]	TBA[2]	TBA[2]
ROM Dam	TBA[2]	TBA[2]	TBA[2]
WRD Dam 1	TBA[2]	TBA[2]	TBA[2]
WRD Dam 2	TBA[2]	TBA[2]	TBA[2]
Stormwater Pond	TBA[2]	TBA[2]	TBA[2]

Notes:

1. TBD – The environmental authority holder must provide this detail/information to the administering authority one (1) month prior to mining and processing activities being undertaken at the Merlin operation.
2. TBA - to be provided to the administering authority by **1 July 2017.**

Assessment of consequence category

(D3) The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with *the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* at the following times:

(a) prior to the design and construction of the structure, if it is not an existing structure; or

(b) prior to any change in its purpose or the nature of its stored contents.

(D4) A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.

(D5) Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

Design and construction[4] of a regulated structure

(D6) Conditions (D7) to (D11) inclusive do not apply to existing structures.

(D7) All regulated structures must be designed by, and constructed[5] under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

(D8) Construction of a regulated structure is prohibited unless:

(a) the holder has submitted a consequence category assessment report and certification to the administering authority; and

(b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.

4 Construction of a dam includes modification of an existing dam—refer to the definitions.

5 Certification of design and construction may be undertaken by different persons.

(D9) Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*, and must be recorded in the Register of Regulated Structures.

(D10) Regulated structures must:

(a) be designed and constructed in compliance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933);*

(b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:

(i) floodwaters from entering the regulated dam from any watercourse or drainage line; and

(ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.

(c) have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.

(D11) Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:

(a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and

(b) construction of the regulated structure is in accordance with the design plan.

Notification of affected persons

(D12) All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure:

(a) for existing structures that are regulated structures, within 10 business days of this condition taking effect;

(b) prior to the operation of the new regulated structure; and

(c) if the emergency action plan is amended, within 5 business days of it being amended.

Operation of a regulated structure

(D13) Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following:

(a) one paper copy and one electronic copy of the design plan and certification of the ‘design plan’ in accordance with condition (D6);

(b) a set of ‘as constructed’ drawings and specifications;

(c) certification of the 'as constructed drawings and specifications' in accordance with condition (D9);

(d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan;

(e) the requirements of this authority relating to the construction of the regulated structure have been met;

(f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and

(g) there is a current operational plan for the regulated structure.

(D14) For existing structures that are regulated structures:

(a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within 12 months of the commencement of this condition a copy of the certified system design plan including that structure; and

(b) there must be a current operational plan for the existing structures.

(D15) Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

Mandatory reporting level

(D16) Conditions (D17) to (D18) inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

(D17) The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.

(D18) The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

(D19) The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.

(D20) The holder must record any changes to the MRL in the Register of Regulated Structures.

Design storage allowance

(D21) The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.

(D22) By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).

(D23) The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.

(D24) The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to

prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

Annual inspection report

(D25) Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

(D26) At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.

(D27) The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

(D28) The holder must within 20 business days of receipt of the annual inspection report, provide to the administering authority:

(a) The recommendations section of the annual inspection report; and

(b) If applicable, any actions being taken in response to those recommendations; and

(c) If, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days[6] of receipt of the request.

Transfer arrangements

(D29) The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

Decommissioning and rehabilitation

(D30) Regulated structures must not be abandoned but be either:

(a) decommissioned and rehabilitated to achieve compliance with condition (D31); or

(b) be left in-situ for a use by the landholder provided that:

(i) it no longer contains contaminants that will migrate into the environment; and

(ii) it contains water of a quality that is demonstrated to be suitable for its intended use(s); and

(c) the holder of the environmental authority and the landholder agree in writing that the;

(i) dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and

(ii) landholder is responsible for the dam, on and from an agreed date.

(D31) Before surrendering this environmental authority the site must be rehabilitated to achieve a safe, stable, non-polluting landform in accordance with Schedule E - Table E1 (Rehabilitation Requirements).

Register of Regulated Structures

(D32) A Register of Regulated Structures must be established and maintained by the holder for each regulated structure.

(D33) The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.

(D34) The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition (D13) and (D15) has been achieved.

(D35) The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.

(D36) All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.

(D37) The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.

Transitional arrangements

(D38) All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual within 6 months of amendment of the authority adopting this schedule.

(D39) All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in Schedule D - Table 3 (Transitional hydraulic performance requirements for existing structures), depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.

(D40) Schedule D - Table D3 ceases to apply for a structure once any of the following events has occurred:

- (a) it has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or
- (b) it has been decommissioned; or
- (c) it has been certified as no longer being assessed as a regulated structure.

(D41) Certification of the transitional assessment required by conditions (D38) and (D39) (as applicable) must be provided to the administering authority within 6 months of amendment of the authority adopting this schedule.

Schedule D – Table D3 (Transitional hydraulic performance requirements for existing structures)

Transition period required for existing structures to achieve the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Dams			
Compliance with criteria	**High consequence**	**Significant consequence**	**Low consequence**
>90% and a history of good compliance performance in last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years.
>70%-≤90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review consequence assessment every 7 years.
>50-≤70%	Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Review consequence assessment every 7 years.
≤50%	Within 5 years or as per compliance requirements (e.g. TEP timing).	Within 5 years or as per compliance requirements (e.g. TEP timing).	Review consequence assessment every 5 years.
Regulated levee designed to prevent the ingress of clean flood water <100% compliant[1]	Within 5 years unless otherwise agreed with the administering authority.		

Notes:

1. *Levees designed for the diversion of contaminated waters or protection of the structural integrity of a dam are not to be considered as part of this provision. These levees are considered a key design element of the relevant dam and transitional periods should as such align to that relevant compliance criteria and consequence category.*

END OF CONDITIONS FOR SCHEDULE D

SCHEDULE E – LAND & REHABILITATION

General

(E1) Contaminants that will or may cause environmental harm must not be directly or indirectly released to land, except as permitted under this environmental authority.

Topsoil

(E2) Topsoil and subsoil must be stripped and stockpiled ahead of mining to a depth determined from soil surveys to ensure that useable soil resources are preserved for rehabilitation.

Rehabilitation Objectives

(E3) All land described in Schedule A - Table A1 (Authorised Mining Activities and Locations) must be rehabilitated in accordance with Schedule E - Table E1 (Rehabilitation Requirements), with the exception of Starra 244 pit, Starra 254 pit and Starra 222 pit, in a manner that ensures rehabilitated areas achieve the following rehabilitation objectives:

(a) safe for humans and wildlife;
(b) non-polluting;
(c) stable;
(d) able to sustain an agreed post-mining land-use;
(e) revegetated with species endemic to the area with no declared pest species; and
(f) compliant with all conditions of this environmental authority.

Schedule E - Table E1 (Rehabilitation Requirements)

Mine Domain	Mine Feature Name	Rehabilitation Goals	Rehabilitation Objectives	Indicators	Completion Criteria
Waste Rock Dump (WRD)	Mt Elliot WRD	All land subject to mining activities must be rehabilitated to meet the requirements of the administering authority's Guideline - *Rehabilitation Requirements for Mining Projects* and will be defined in the Post Mine Land Use Plan.	TBD[1]	TBD[1]	TBD[1]
	Lady Ella WRD				
	257 WRD S				
	257 WRD W				
	254 WRD				
	254 PAF Cell				
	251 WRD				
	244 WRD E				
	244 WRD W				
	222 WRD (Extended)				
	222 WRD N				
	Victoria WRD				
	Victoria WRD 2				
	Merlin WRD				
	276 WRD				
	Mt Dore North WRD				
	Mt Dore South WRD				
Ore Stockpile	251 Ore Stockpile				
	254 Oxide/Low Grade				
	Victoria Ore Stockpile				
	Selwyn Ore Stockpile				
	Merlin Ore Stockpile				

Mine Domain	Mine Feature Name	Rehabilitation Goals	Rehabilitation Objectives	Indicators	Completion Criteria
	276 Ore Stockpile				
	Lady Ella Ore Stockpile				
	Mt Elliot Ore Stockpile				
Run of Mine (ROM)	Mt Elliot ROM				
	Selwyn Mill ROM				
	Merlin ROM				
	222 ROM				
	254 ROM				
	276 ROM				
	Lady Ella ROM				
	Mt Dore ROM/ Agglomerator/ Crusher				
Processing Area	Old Selwyn Mill				
	Merlin Concentrator				
	Mt Dore Process Plant				
	Mt Dore Process Ponds				
	Mt Dore ROM/ Process/ Heap Leach Surrounds				
Heap Leach	Heap Leach				
	Mt Dore Heap Leach Pad				
Portals	Mt Elliot Portal				
	Merlin Portal				
	276 Portal				
	251 Portal				
	222 Portal/Decline				
Open Cut Pit	Lady Ella Pit				
	Victoria Pit N				
	Victoria Pit S				
	Mt Dore North Pit				
	Mt Dore South Pit				
Subsidence	Mt Elliot Subsidence				
	244 Subsidence				
Tailings Storage Facility (TSF)	Eastern TSF				
	Southern TSF				
Water Storages and Sediment Dams (SD)	Mt Elliot Southern SD				
	Lady Ella SD				
	Lady Ella Northern SD				
	276 SD W				
	276 SD NW				
	257 Northern SD				
	257 North-Western SD				
	257 Western SD				
	254 ROM Dam				
	254 LG Stockpile Pond				
	254 WRD Sediment Dam 1				
	254 WRD Sediment Dam 2				
	254 WRD Sediment Dam 3				
	254 WRD Sediment Dam 4				

Mine Domain	Mine Feature Name	Rehabilitation Goals	Rehabilitation Objectives	Indicators	Completion Criteria
	254 PAF Dam				
	254 Southern Dam				
	254 Western Dam				
	254 Turkeys Nest				
	251 Northern SD				
	251 North-Western SD				
	251 Southern SD				
	Lake Wyche				
	222 Northern SD				
	222 Western SD				
	222 Southern SD				
	222 ROM Pad				
	Victoria SD				
	Merlin SD (ROM)				
	Merlin SD (North of WRD)				
	Merlin SD (Paste Plant)				
	Merlin 1 Environment Dam (General Infrastructure)				
	Merlin 2 Environment Dam				
	Merlin 3 Environment Dam				
	Eastern TSF Duck Pond				
	Eastern TSF Seepage Pond				
	Selwyn Pregnant Liquor Pond				
	Selwyn SD				
	Mt Dore ROM Dam				
	Mt Dore North WRD Environment Dam 1				
	Mt Dore North WRD Environment Dam 2				
	Mt Dore South WRD Environment Dam				
Topsoil Stockpiles	276 Soil Stockpile				
	254 Soil Stockpile				
	222 Soil Stockpile				
	Merlin Soil Stockpile				
	222 Soil Stockpile				
	Mt Dore North WRD Soil Stockpiles				
	Mt Dore North Pit Soil Stockpile				
	Mt Dore South WRD Soil Stockpiles				
	Mt Dore South Pit Soil Stockpile				
	Mt Dore Process Plant Soil Stockpile				
	Mt Dore Leach Pad Soil Stockpile				
Exploration	Proposed further exploration				
Ancillary Infrastructure	276 Infrastructure				
	Merlin Paste Plant				
	Merlin Infrastructure				

Mine Domain	Mine Feature Name	Rehabilitation Goals	Rehabilitation Objectives	Indicators	Completion Criteria
	Donghui Village (formerly Mt Dore Camp)				
	Merlin-Osborne Power Line				
	Merlin Power Substation				
	STD Power Spur Line & Transformer				
	Mt Dore Equipment Parking				
	Mt Dore Laydown Area				
	Tailings Line				
	254 Explosives Magazines (2)				
	254 Water truck Fill Point				
	254 Dewatering Pipeline				
	Selwyn Precinct Offices & Ablutions				
	Selwyn Precinct Workshop				
	Selwyn Precinct Go-Bay				
	Selwyn Precinct Warehouse				
	Selwyn Precinct Fuel Storage				
	Selwyn Precinct Boilermakers				
	Selwyn Precinct STP				
	Selwyn Precinct RO				
	Selwyn Precinct Waste Trench				
	Selwyn Precinct Batch Plant				
	Selwyn – 222 Powerline				
	222 Fuel Storage Power generation				
	222 Offices & Ablutions				
	222 Workshop				
	222 Go-bay				
	222 Jacking pad				
	222 Laydown/UG Power Generation				
	222 STP				
	222 RO Plant				
	222 Header Tank				
	222 Water Truck Fill				
	222 Batch Plant				
	222 Air-rises (2)				
Pipelines	Merlin-Osborne Water Line				
	Tailings Pipeline Access Road				
	Donghui Village Roads				
	De-watering Line				
	Selwyn Precinct Raw Water				
	Starra 254 Dewater / Waste				
	Selwyn Precinct Dewatering Pipeline				
	Selwyn to Starra 222 Raw water				
	Starra 222 Raw water				

Mine Domain	Mine Feature Name	Rehabilitation Goals	Rehabilitation Objectives	Indicators	Completion Criteria
	Starra 222 Dewater / Waste				
Roads and Tracks	Merlin Roads				
	276 Roads				
	Other Roads				
	Haul Road				
	Donghui Village Roads				
	Mt Dore Haul Roads				
Open Cut Pit	244 Pit	Water not fit for use	Storage of tailings and PAF waste rock		
	254 Pit	Water not fit for use	Storage of tailings and PAF waste rock		
	222 Pit	Water not fit for use	TBD[1]	TBD[1]	TBD[1]

Notes:

1. Post mine land use, rehabilitation indicators and completion criteria are to be nominated in accordance with Condition (E5).

Post Mine Land Use Plan

(E5) A Post Mine Land Use Plan (PMLUP) that describes how the rehabilitation objectives in Schedule E - Table E1 (Rehabilitation Requirements) will be achieved must be developed, documented and implemented for all stages of the mining activity by 1 July 2017, and must be updated and resubmitted with each Plan of Operations. The PMLUP must, at a minimum, include:

a) Schematic representation of the proposed final land form inclusive of drainage features;
b) Details of proposed slope design and erosion and sediment controls;
c) Proposed cover designs for encapsulation of waste material, including performance criteria;
d) Description of experimental design for monitoring of analogue and rehabilitated areas inclusive of statistical design;
e) Proposed revegetation methods inclusive of plant species selection, propagation methods and establishment of suitable plant growth medium (i.e. topsoil);
f) Materials balance for all rehabilitation requirements including available top soil and material suitable for encapsulating waste in accordance with the proposed encapsulation methodology;
g) Geotechnical, geochemical and hydrological studies necessary to demonstrate likely success of proposed rehabilitation methodology to achieve the required rehabilitation outcomes;
h) Chemical, physical and biological properties of soil and water;
i) An investigation of proposed residual voids including potential for generation/mobilization of contaminants, potential pathways for release of contaminants to waters (including groundwater) and a long-term void water balance model; and
j) A rehabilitation monitoring program sufficient to identify if required rehabilitation outcomes have been achieved.

Infrastructure

(E6) All buildings, structures, mining equipment and plant erected and/or used for the mining activities must be removed from the site prior to surrender, except where agreed in writing by the administering authority and the landowner.

Chemicals and Flammable or Combustible Liquids

(E7) All explosives, hazardous chemicals, corrosive substances, toxic substances, gases, *flammable or combustible* liquids and dangerous goods must be stored and handled in accordance with:

a) the current, relevant Australian Standard where applicable; or

b) where no relevant Australian Standard exists, store such materials within an on-site containment system sufficient to prevent release to the receiving environment.

Contaminated Land

(E8) Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.

(E9) Before applying for progressive certification for an area, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use under condition (E3).

Residual Voids

(E10) Residual voids must not cause any serious or material environmental harm, other than the environmental harm constituted by the existence of the residual void itself, subject to any other condition within this environmental authority.

END OF CONDITIONS FOR SCHEDULE E

Schedule F - Noise and Vibration

General

(F1) Noise generated by the mining activities must not cause environmental harm at any sensitive place or commercial place.

END OF CONDITIONS FOR SCHEDULE F

Schedule G - Waste

(G1) A Waste Management Program must be developed by an appropriately qualified person and implemented by 1 July 2017. The Waste Management Program must be updated and reviewed annually. The Waste Management Program must include:

(a) a description of the mining activities that may generate waste;

(b) the types and amounts of wastes generated by the mining activities;

(c) a program for reusing, recycling or disposing of all wastes;

(d) how the waste will be dealt with in accordance with the waste management hierarchy, including a description of the types and amounts of waste that will be dealt with under each of the waste management practices in the waste management hierarchy (*i.e.* avoidance, reuse, recycling, energy recovery, disposal);

(e) procedures for identifying and implementing opportunities to minimise the amount of waste generated, promote efficiency in the use of resources and improve the waste management practices employed;

(f) procedures for dealing with accidents, spills and other incidents;

(g) details of any accredited management system employed, or planned to be employed, to deal with waste;

(h) how often the performance of the waste management program will be assessed;

(i) the indicators or other criteria on which the performance of the waste management program will be assessed; and

(j) staff training and induction to the waste management program.

Waste Disposal

(G2) The only waste that can be disposed of on site is waste that has been generated on site, and is limited to:

(a) waste rock;

(b) general waste including construction and demolition waste, green waste and domestic wastes; and

(c) tyres.

(G3) Subject to demonstrating to the administering authority that no other use higher in the waste management hierarchy can be practicably implemented, the following waste generated from mining activities may be disposed of on site in the Starra 222, 244, 254 and 257 open cut pits:

(a) construction and demolition waste consisting of concrete, timber, glass, and steel; and

(b) exploration drill cuttings.

(G4) General waste, other than those waste items mentioned in condition (G3), must only be disposed of into the waste disposal trench facility located on ML2693 and identified in Schedule J – Plan 8 (General Waste Disposal Area).

(G5) The active waste disposal trench must be constructed and operated to minimise the generation of leachate, including a system of diversion drains or embankments to divert surface waters away from any area where contact with wastes or sources of contamination may occur.

(G6) Unless otherwise permitted by the conditions of this environmental authority, waste generated on-site must not be burnt on-site, except for cardboard and timber for safety exercises only, no waste may be taken off-site and burnt.

Regulated Waste

(G7) Regulated waste, other than that authorised to be disposed of on site under this authority, must only be removed and transported from the site by a person who holds a current authority to transport such wastes to a facility that is lawfully able to accept the waste under the *Environmental Protection Act 1994*.

Tyre Storage and Disposal

(G8) Subject to demonstrating to the administering authority that no other use higher in the waste management hierarchy can be practicably implemented, waste tyres generated from mining activities may be disposed of on site in non-acid forming waste rock dumps or underground stopes.

Waste Rock Management

(G9) By 1 July 2018, the environmental authority holder must develop and implement a Waste Rock Management Plan (WRMP), certified by an appropriately qualified person, and updated and reviewed annually, which includes:

(a) a detailed design of the waste rock dumps that meets the requirements of this condition;

(b) characterisation of the waste rock to predict the quality of runoff and seepage generated including salinity, acidity, alkalinity dissolved metals, metalloids and non-metallic inorganic substances;

(c) a progressive sampling program to validate pre-mine waste rock characterisation. The waste rock sampling program must include validation of salinity, acidity and alkalinity, dissolved metals, metalloids and non-metallic inorganic substances;

(d) where the acid mine drainage potential and neutral mine drainage potential of waste rock material has not been conclusively determined, geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies;

(e) a materials balance and disposal plan demonstrating how potentially acid forming and acid forming waste rock will be selectively placed and/or encapsulated to prevent the generation of acid mine drainage;

(f) a materials balance and disposal plan demonstrating how waste rock that has a potential to generate neutral and/or saline mine drainage will be selectively placed and managed to prevent the generation of neutral mine drainage;

(g) a sampling program to verify encapsulation and/or placement of potentially acid-forming, acid-forming waste rock and waste rock that has a potential to generate neutral mine drainage, in accordance with the detailed design plan;

(h) records must be maintained of all waste rock characterisation and disposal including contingency planning for the management of acid mine drainage and neutral mine drainage;

(i) how often the effectiveness of the plan will be assessed;

(j) a rehabilitation strategy and monitoring program that will achieve the rehabilitation objectives specified in Schedule E of this environmental authority;

(k) a monitoring program that verifies the requirements of condition G8(j) have been completed.

(G10) Any waste rock characterised as acid forming or potentially acid forming must be either:

(a) returned to underground voids as fill where it can be demonstrated there is a low risk of groundwater contamination; or

(b) placed in an open cut pit in a manner that minimises exposure to oxidation and mobilisation of contaminants; or

(c) for historical stockpile/deposits only, may remain at the Mt Elliot Waste Rock Dump; or

(d) where the characteristics of waste rock in regards to acid producing potential is uncertain, this material must be treated as potentially acid forming until demonstrated otherwise; and

(e) waste rock characterised as acid forming or potentially acid forming must not be placed at the Merlin Waste Rock Dump.

(G11) Any seepage from waste rock dumps that has the potential to cause environmental harm must be captured and not released into the receiving environment.

Tailings Management

(G12) Tailings must be managed in accordance with procedures contained within the current Tailings Operations Plan or equivalent document. These procedures must include provisions for:

(a) containment of tailings;

(b) the management of seepage and leachates both during operation and the foreseeable future;

(c) the control of fugitive emissions to air;

(d) a program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings;

(e) maintaining records of the relative locations of any other waste stored within the tailings;

(f) rehabilitation strategy;

(g) monitoring of rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of tailings, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.

Saline, Acid Rock and Metalliferous Drainage

(G13) The environmental authority holder must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline, acid rock and/or metalliferous drainage.

Heap Leach Pads

(G14) The design and construction (or reconstruction) of heap leach pads must be undertaken by an appropriately qualified person and must include, but not be limited to:

(a) a liner which is chemically compatible with the fluids it will be exposed to;

(b) adequate sizing of launders, perimeter drains and containment bunds to prevent the release of contaminants to the receiving environment; and

(c) a leak detection system.

Heap Leach Operational Plan

(G15) By 1 July 2017, the environmental authority holder must develop and implement a Heap Leach Operational Plan (HLOP) certified by a suitably qualified and experienced person, that achieves the following requirements:

(a) diversion of uncontaminated stormwater away from the heap leach pads and minimising catchment size;

(b) procedures to prevent tears and leaks in the liner;

(c) contingency plans in the event of the release of contaminants;

(d) records of 'as constructed' and design plans, all pipes and infrastructure associated with the heap leach operation;

(e) procedures to minimise erosion of the heap leach pads and exclude ore from entering the launders and/or perimeter drains; and

(f) a monitoring program that is capable of detecting any potential releases of contaminants to the receiving environment.

(G16) Any material disposed of within the 254 open pit, must be managed to maintain a negative water balance.

END OF CONDITIONS FOR SCHEDULE G

Schedule H - Nature Conservation

Environmental offsets

Impacts to Prescribed Environmental Matters

(H1) Significant residual impacts to prescribed environmental matters, are not authorised under this environmental authority or the *Environmental Offsets Act 2014* unless the impact(s) is specified in Schedule H – Table H1 (Significant residual impacts to prescribed environmental matters) and all information required for Schedule H – Table H1 (Significant residual impacts to prescribed environmental matters) has been provided to the administering authority.

Schedule H – Table H1 (Significant residual impacts to prescribed environmental matters)

Prescribed environmental matter	Location of impact	Maximum extent of impact
Regulated Vegetation – intersecting a watercourse	ML2733	8.90ha[1]
1.3.7b *(Eucalyptus camaldulensis fringing woodland, usually with Lophostemon grandiflorus and Melaleuca bracteata and/or M. dissitiflora).*	ML2733	8.90ha[1]
Category B - Essential Habitat *Purple Necked Rock Wallaby*	ML2733	15.38[1]

[1]The activities associated with this environmental authority are to be conducted only within the areas identified in Schedule H – Plan 1 – MSES Features on Proposed Mine Plan.

H2 Records demonstrating that each impact to a prescribed environmental matter not listed in Schedule H – Table H1 Significant residual impacts to prescribed environmental matters) did not, or is not likely to, result in a significant residual impact to that matter must be:

a) Completed by an appropriately qualified person; and

b) kept for the life of the environmental authority.

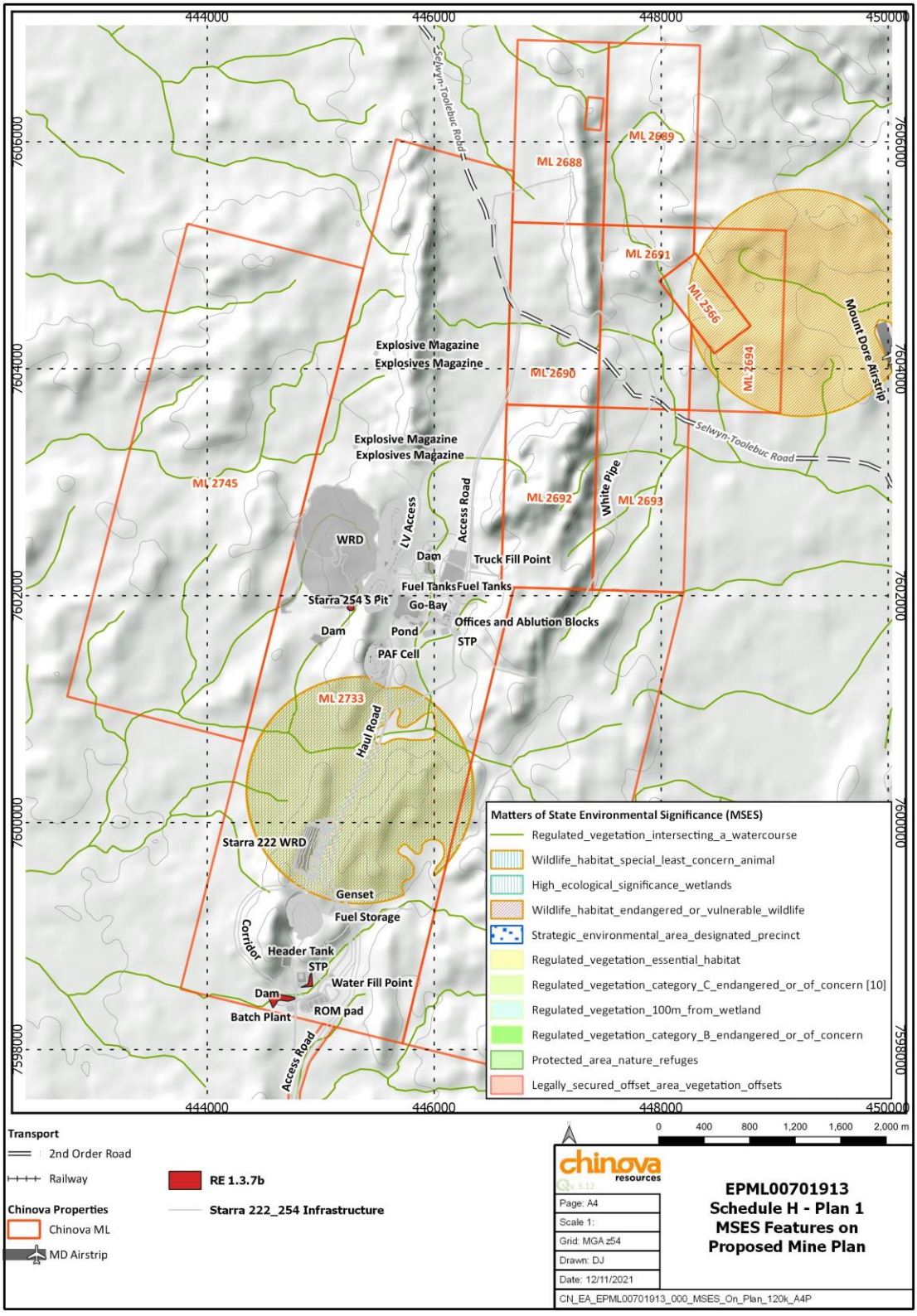
H3 An environmental offset made in accordance with the *Environmental Offsets Act 2014* and *Queensland Environmental Offsets Policy*, as amended from time to time, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in Schedule H – Table H1 (Significant residual impacts to prescribed environmental matters), unless a lesser extent of the impact has been approved in accordance with condition H5.

Non-staged impacts

H4 Prior to the commencement of any impacts to a prescribed environmental matter for which an environmental offset is required by condition H3, a report completed by an appropriately qualified person that contains an analysis of the estimated maximum extent of impact to each prescribed environmental matter must be provided to the administering authority.

H5 The report required by condition H3 must be approved by the administering authority before the notice of election, if applicable, is given to the administering authority.

H6 The notice of election for the environmental offset required by condition H3, if applicable, must be provided to the administering authority no less than three months before the proposed commencement of the significant residual impacts for which the environmental offset is required.



Schedule H – Plan 1 – MSES Features on Proposed Mine Plan

END OF CONDITIONS FOR SCHEDULE H

Schedule I – Definitions

Words and phrases used throughout this Environmental Authority are defined below except where identified in the *Environmental Protection Act 1994* or subordinate legislation. Where a word or term is not defined, the ordinary English meaning applies, and regard should be given to the Macquarie Dictionary.

"acid mine drainage (AMD)" means any contaminated release emanating from a mining operation formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture as a result of mining operations.

"acid rock drainage" means any contaminated release emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture.

"administering authority" is the agency that administers the environmental authority provisions under the *Environmental Protection Act 1994*.

"AEP" means the annual exceedance probability, which is the probability that at least one event in excess of a particular magnitude will occur in any given year.

"assessed" by a suitably qualified and experienced person in relation to a hazard assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

(a) Exactly what has been assessed and the precise nature of that determination;
(b) The relevant legislative, regulatory and technical criteria on which the determination has been based;
(c) The relevant data and facts on which the determination has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and,
(d) The reasoning on which the determination has been based using the relevant data and facts, and the relevant criteria.

"certification", "certifying" or "certified" by an appropriately qualified and experienced person in relation to a design plan or an annual report regarding dams/structures, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:

a) exactly what is being certified and the precise nature of that certification
b) the relevant legislative, regulatory and technical criteria on which the certification has been based
c) the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts
d) the reasoning on which the certification has been based using the relevant data and facts, and the relevant criteria.

"chemical" means:

a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth); or

b) a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council; or

c) a lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 1997; or

d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth; or

e) any substance used as, or intended for use as:

(i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product; or

(ii) a surface active agent, including, for example, soap or related detergent; or
(iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or
(iv) a fertiliser for agricultural, horticultural or garden use; or
(v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or
(vi) manufacture of plastic or synthetic rubber.

"commercial place" means a work place used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees' accommodation or public roads.

"construction" or **"constructed"** in relation to a regulated structure includes building a new regulated structure and lifting or otherwise modifying an existing regulated structure, but does not include investigations and testing necessary for the purpose of preparing a design plan.

"contaminate" means to render impure by contact or mixture.

"contaminated" means the substance has come into contact with a contaminant.

"contaminant" can be:
(a) A gas, liquid or solid;
(b) An odour;
(c) An organism (whether alive or dead), including a virus;
(d) Energy, including noise, heat, radioactivity, and electromagnetic radiation;
(e) A combination of contaminants.

"design storage allowance" or **"DSA"** means an available volume, estimated in accordance with the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995), that must be provided in a dam as at the first of November each year in order to prevent a discharge from that dam to a probability (AEP) specified in that guideline. The DSA is estimated based on 100% runoff of wet season rainfall at the relevant AEP, taking account of process inputs during that wet season, with no allowance for evaporation.

"disturbance" of land includes:
a) Compacting, removing, covering, exposing or stockpiling of earth
b) Removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion
c) Carrying out mining within a watercourse, waterway, wetland or lake
d) The submersion of areas by tailings or hazardous contaminant storage and dam/structure walls
e) Temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after the mining activity has ceased
f) Releasing of contaminants into the soil, or underlying geological strata.

However, the following areas are not included when calculating areas of 'disturbance':
a) Areas off lease (e.g. roads or tracks which provide access to the mining lease)
b) Areas previously disturbed which have achieved the rehabilitation outcomes
c) By agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions)
d) Areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner
e) Disturbance that pre-existed the grant of the tenure.

"effluent" means treated waste water released from sewage treatment plants.

"environmental authority holder" means the holder of this environmental authority.

"environmental authority" means a licence or approval issued pursuant to the *Environmental Protection Act 1994.*

"environmental offset" has the meaning in section 7 of the *Environmental Offsets Act 2014.*

"existing authority" has the meaning in section 94 of the *Environmental Offsets Act 2014.*

"general waste" means waste other than regulated waste.

"groundwater" means underground water and is that portion of the water beneath the surface of the earth that may be collected with wells, tunnels, or drainage galleries, or flow naturally to the earth's surface via seeps or springs.

"hazard" in relation to a dam as defined, means the potential for environmental harm resulting from the collapse or failure of the dam to perform its primary purpose of containing, diverting or controlling flowable substances.

"hazard category" means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in 'Manual for Assessing Hazard Categories and Hydraulic Performance of Dams'.

"infrastructure" means water storage dams, levees, roads and tracks, buildings and other structures built for the purpose of the mining activity.

"$L_{Amax\ adj,T}$" means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over a time period of not less than 15 minutes, using Fast response.

"land" in the 'land schedule' of this document means land excluding waters and the atmosphere, that is, the term has a different meaning from the term as defined in the *Environmental Protection Act 1994*. For the purposes of the *Acts Interpretation Act 1954*, it is expressly noted that the term 'land' in this environmental authority relates to physical land and not to interests in land.

"land use" means the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

"leachate" means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the operational land which contains soluble, suspended or miscible contaminants likely to have been derived from said material.

"measures" includes any measures to prevent or minimise environmental impacts of the activity such as bunds, silt fences, diversion drains, capping, and containment systems.

"PAF" means potentially acid forming material.

"Prescribed environmental matters" has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significant listed in schedule 2 of the *Environmental Offsets Regulation 2014*.

"rehabilitation" the process of reshaping and revegetating land to restore it to a stable landform.

"residual void" means an open pit/void resulting from the removal of ore and/or waste rock which will remain following the cessation of all mining activities and completion of rehabilitation processes.

"sediment dam" means sedimentation dams as defined in the Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995).

"sensitive place" is -

(a) immediately outside a dwelling, mobile home or caravan park, residential marina or other residential premises; or
(b) immediately outside a motel, hotel or hostel; or
(c) immediately outside a kindergarten, school, university or other educational institution; or
(d) immediately outside a medical centre or hospital; or
(e) immediately outside a protected area; or
(f) immediately outside a park or gardens.

"significant residual impact" has the meaning in section 8 *Environmental Offsets Act 2014*.

"suitably qualified and experienced persons" means a person who is a Registered Professional Engineer of Queensland under the provisions of the *Professional Engineers Act 2002*, who has an **appropriate level of expertise** in the structures, geomechanics, hydrology, hydraulics and environmental impact of watercourse diversions.

An ***appropriate level of expertise*** includes:

- demonstrable competency, experience and expertise in:
  - investigation, design or construction of watercourse diversions
  - operation and maintenance of watercourse diversions
  - geomechanics with particular emphasis on channel equilibrium, geology and geochemistry
  - hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology
  - hydraulics with particular reference to sediment transport and deposition and erosion control
  - hydrogeology with particular reference to seepage and groundwater
  - solute transport processes and monitoring thereof, or
- sufficient knowledge and experience to certify that where the **suitable qualified and experienced person** has relied on advice and information provided by other **persons with relevant expertise*:**
  - they consider it reasonable to rely on that advice and information
  - the expert providing the advice and information has knowledge, competency, suitable experience and demonstrated expertise in the matters related to watercourse diversion.

Persons with relevant expertise include:

- Geomorphologist: person who has demonstrated competency and relevant experience in stream geomorphology and watercourse diversions.
- Geotechnical Expert: person who has demonstrated competency and relevant experience in geotechnical assessment of soil characteristics suitable for watercourse diversions.
- Vegetation Expert: person who has demonstrated competency and relevant experience in the identification, role and function of vegetation with watercourses and adjoining floodplains, and has demonstrated competency and relevant experience in revegetation of watercourse diversions and adjoining floodplains.
- Groundwater Expert: person who has demonstrated competency and relevant experience in groundwater ecosystems.
- Surface Water Expert: person who has demonstrated competency and relevant experience in hydrology.
- Engineer: person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Persons Act 2002* or has similar qualifications under a respected professional registration association, and has demonstrated competency and relevant experience in design and construction of watercourse diversions.
- Soils Expert: person who has demonstrated competency and relevant experience in soil classification including the physical, chemical and hydrologic analysis of soil.

"the Act" means the *Environmental Protection Act 1994.*

"void" means any constructed, open excavation in the ground.

"waste" includes anything that is:

(a) Left over, or an un-wanted by-product, from an industrial, commercial, domestic or other activity; or
(b) Surplus to the industrial, commercial, domestic, or other activity generating the waste.

"waste water" means used water from the activity, process water or contaminated storm water.

"water quality" means the chemical, physical and biological condition of water.

"waters" includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

END OF SCHEDULE I

Schedule J - Site Plan and Monitoring Locations

Schedule J - Plan 1 (Air Quality Monitoring Sites)

Schedule J – Plan 2 (Monitoring and Release Locations – Starra Area)

Schedule J - Plan 3 (Monitoring and Release Locations – Mt Elliott and Lady Ella Area)

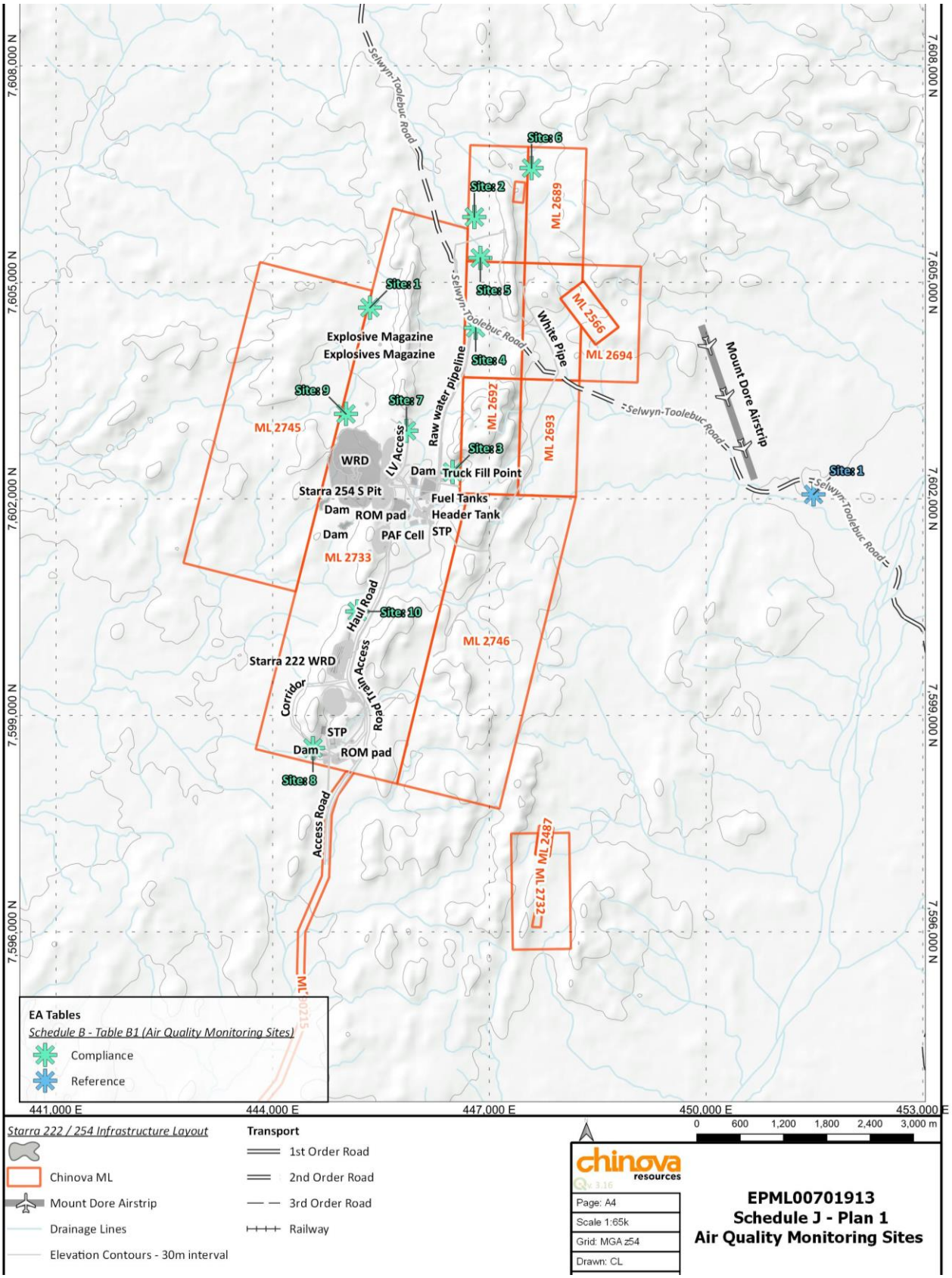
Schedule J - Plan 4 (Monitoring and Release Locations – Victoria and Mt Cobalt Area)

Schedule J – Plan 5 (Monitoring and Release Locations – Mount Dore Area)

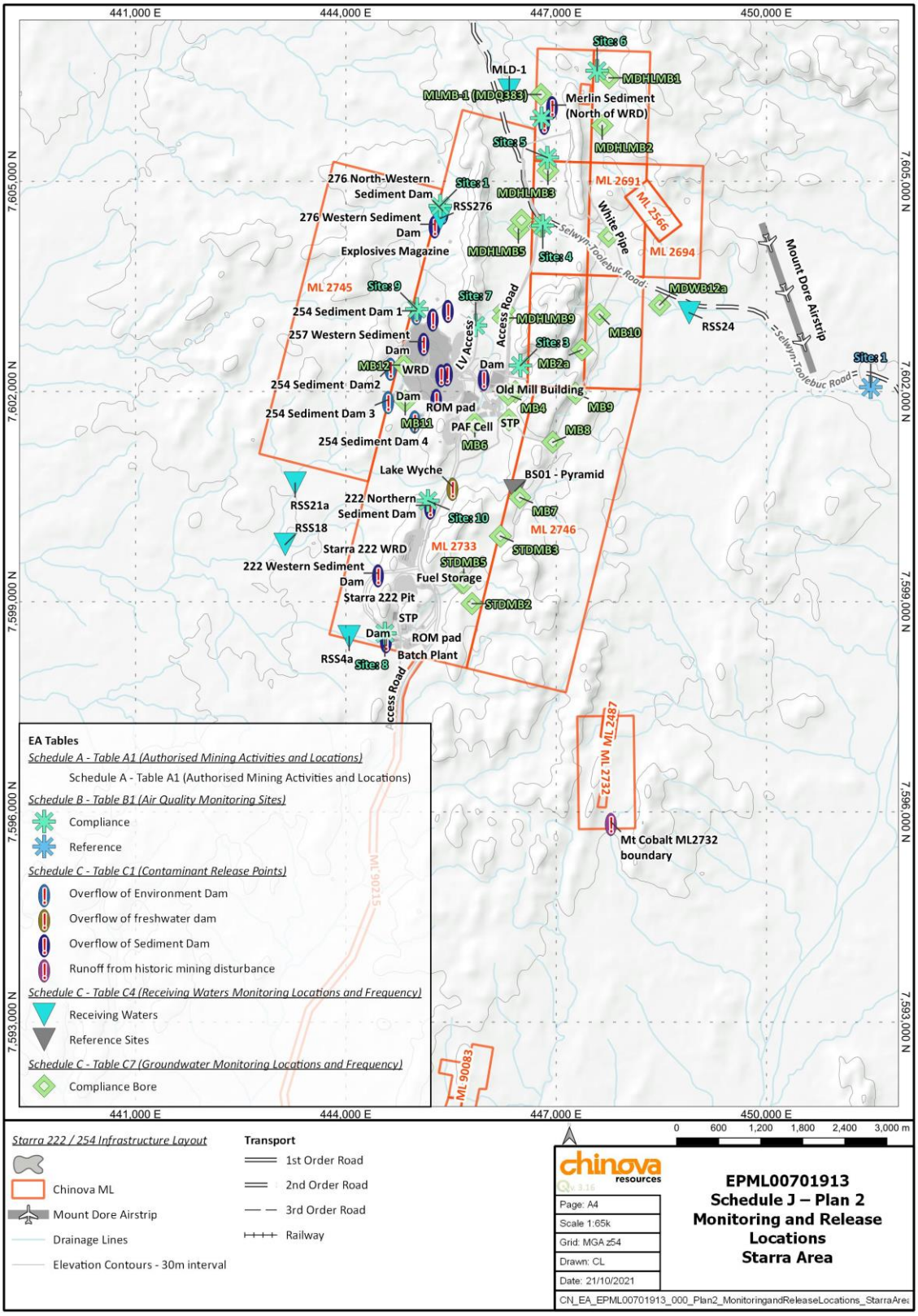
Schedule J - Plan 6 (Stream Flow Gauging Station/s)

Schedule J - Plan 7 (Effluent Irrigation Areas)

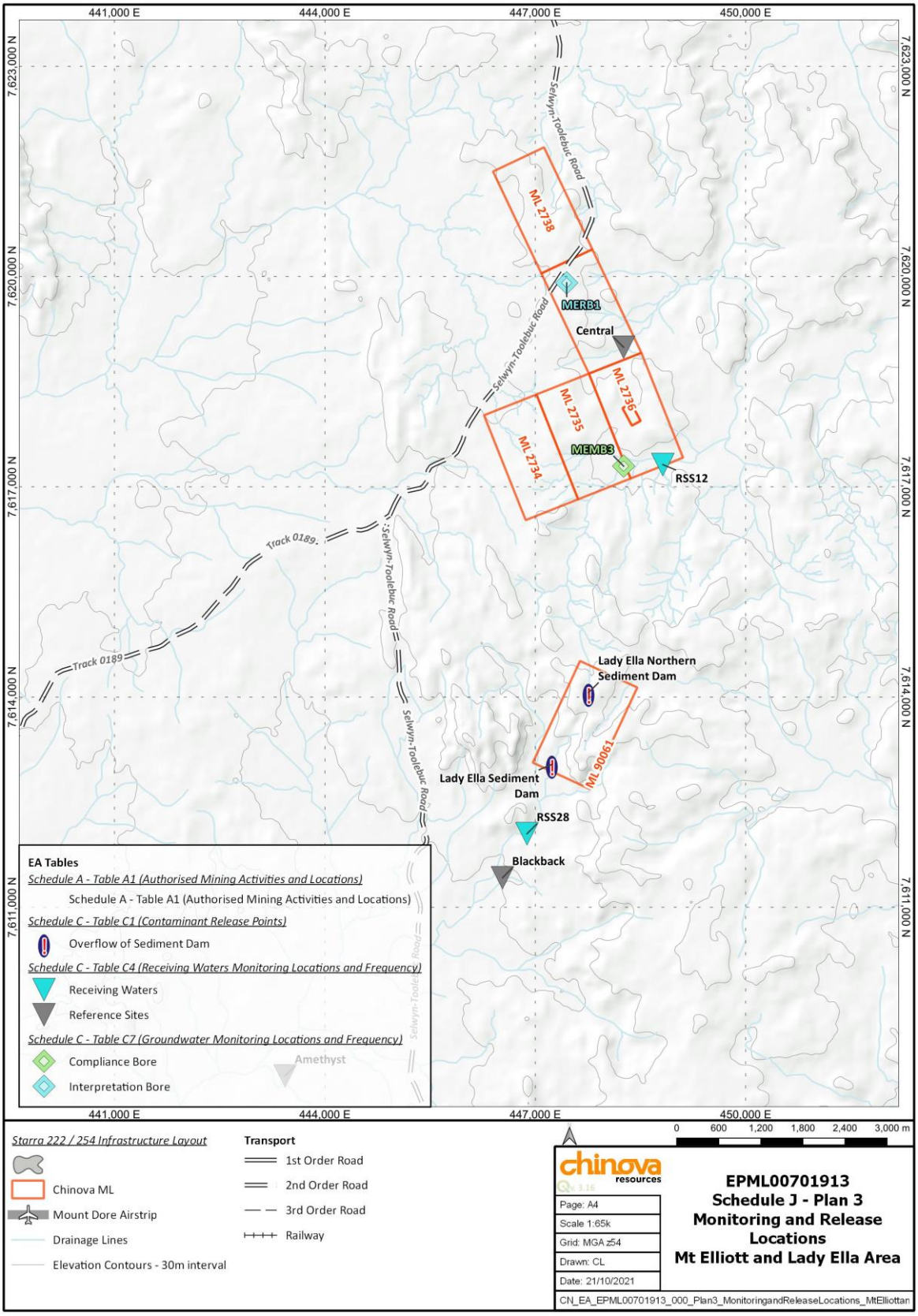
Schedule J - Plan 8 (General Waste Disposal Area)



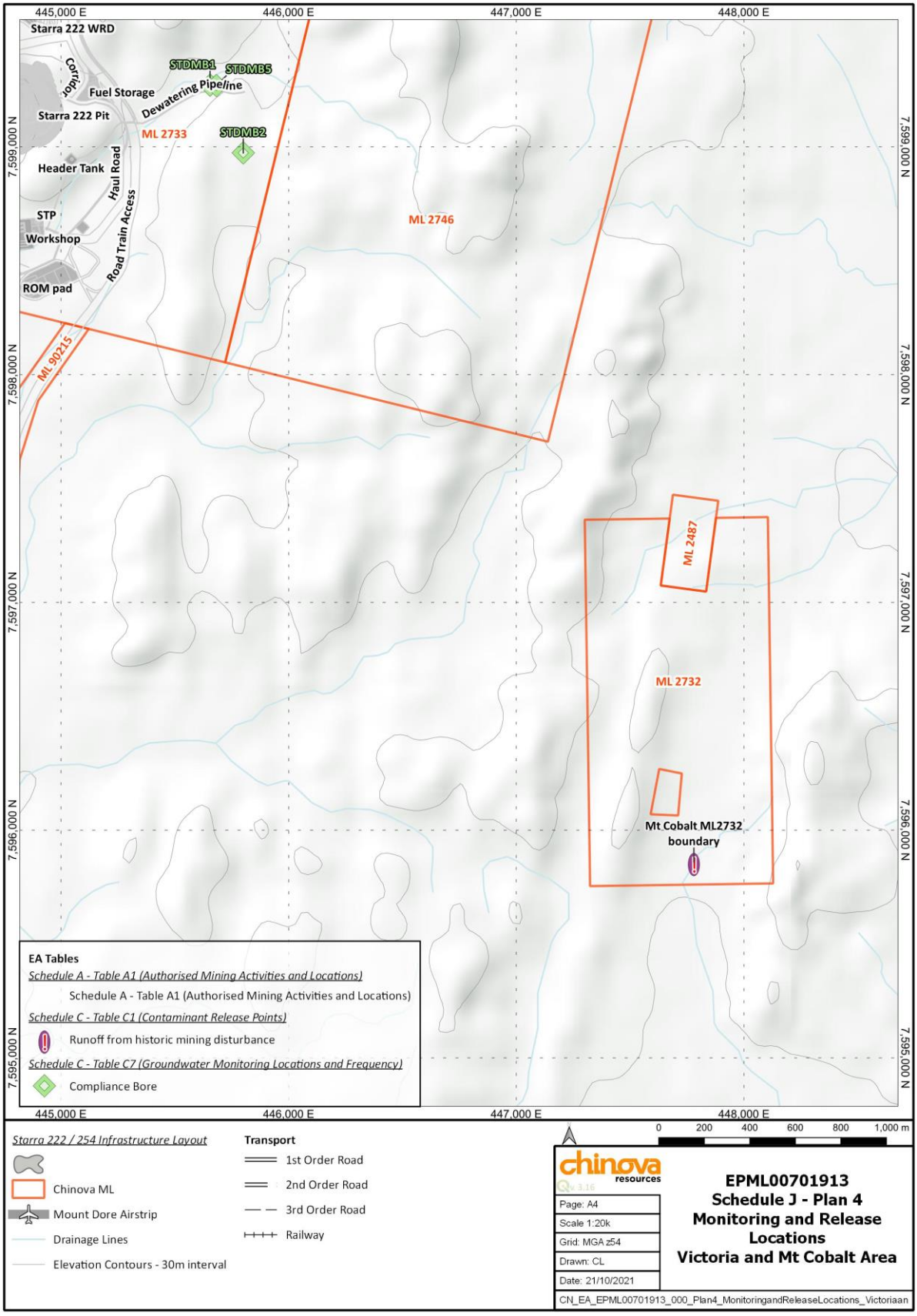
Schedule J - Plan 1 (Air Quality Monitoring Sites)



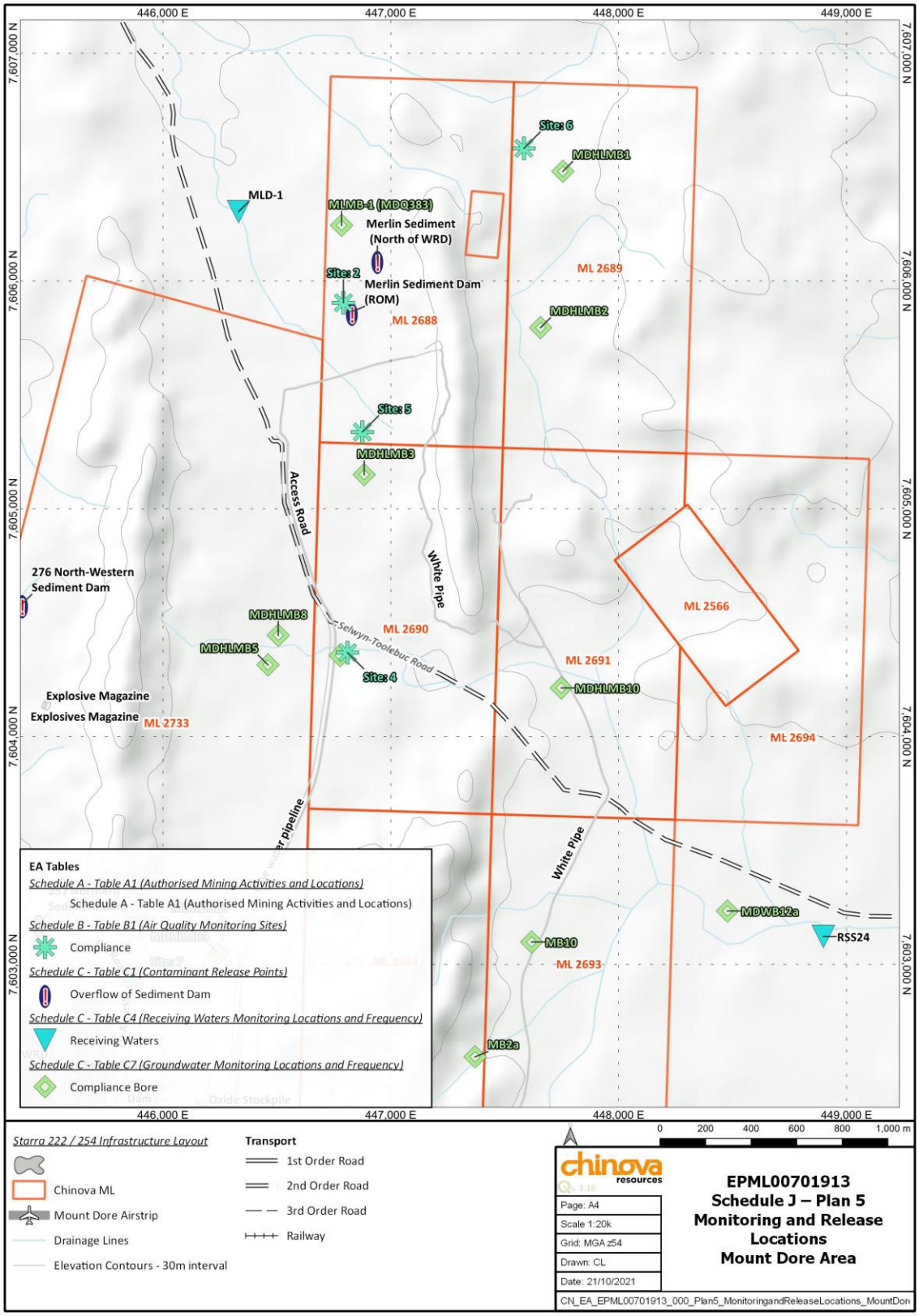
Schedule J - Plan 2 (Monitoring and Release Locations – Starra Area)



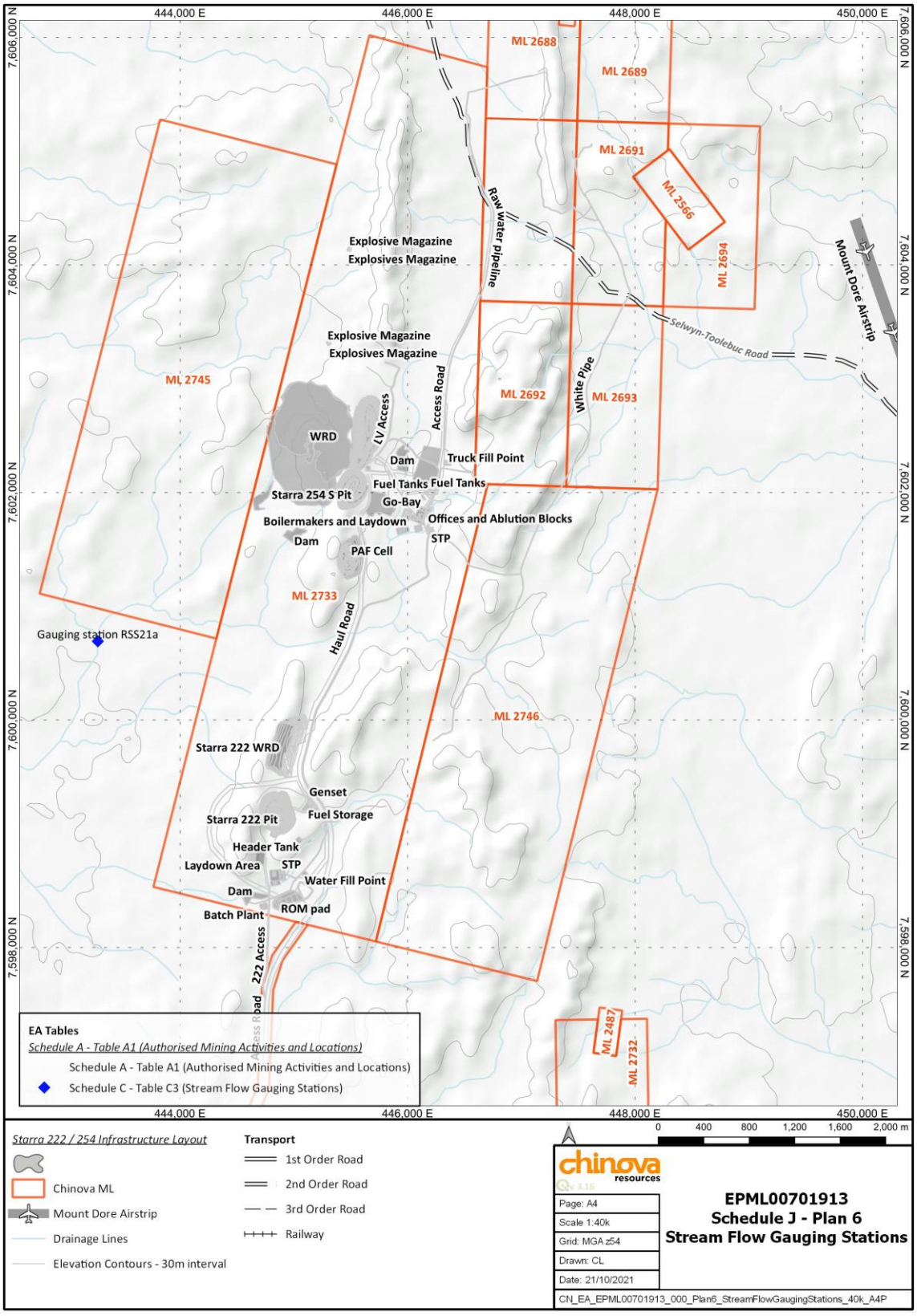
Schedule J - Plan 3 (Monitoring and Release Locations – Mt Elliott and Lady Ella Area)



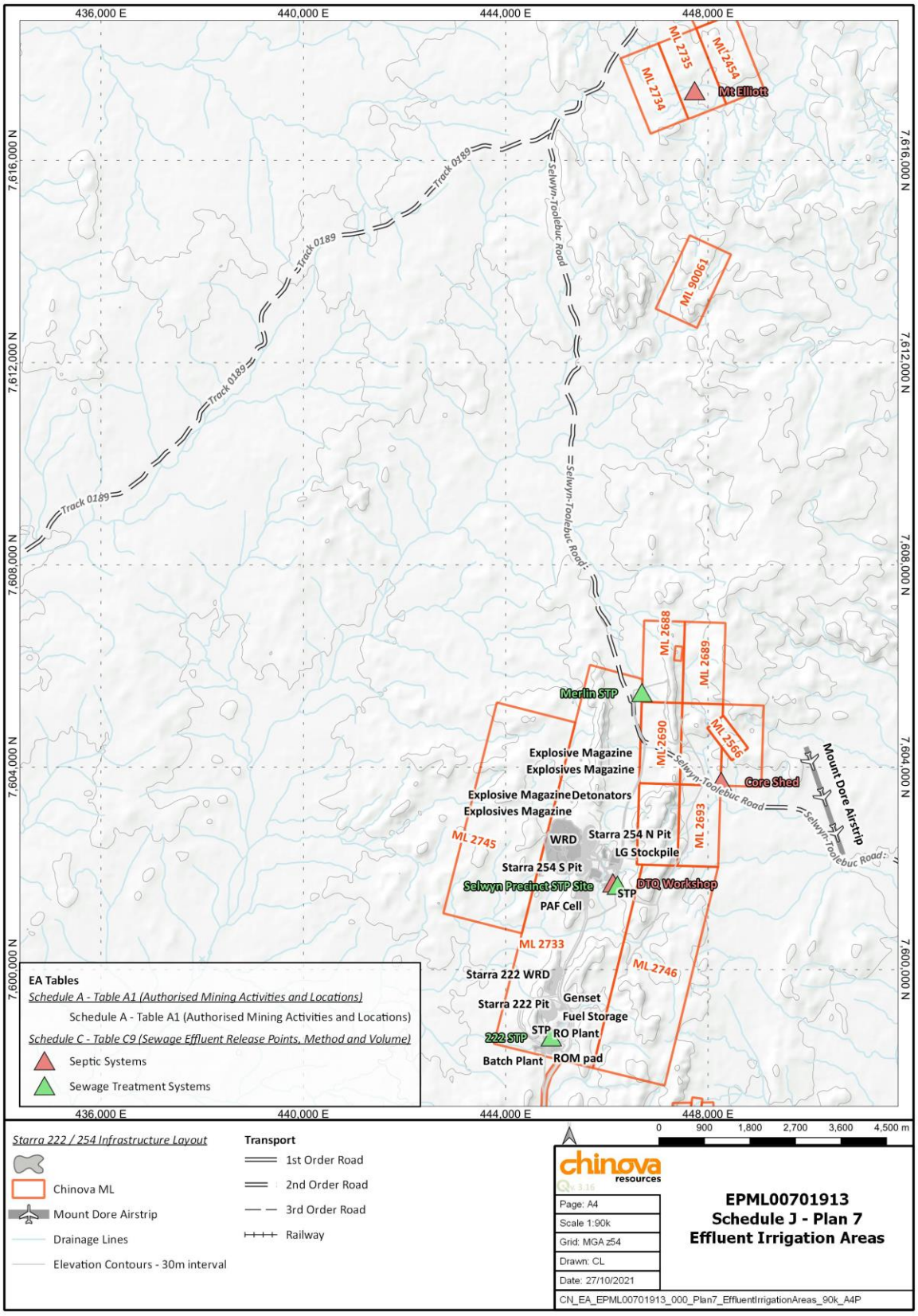
Schedule J - Plan 4 (Monitoring and Release Locations – Victoria and Mt Cobalt Area)



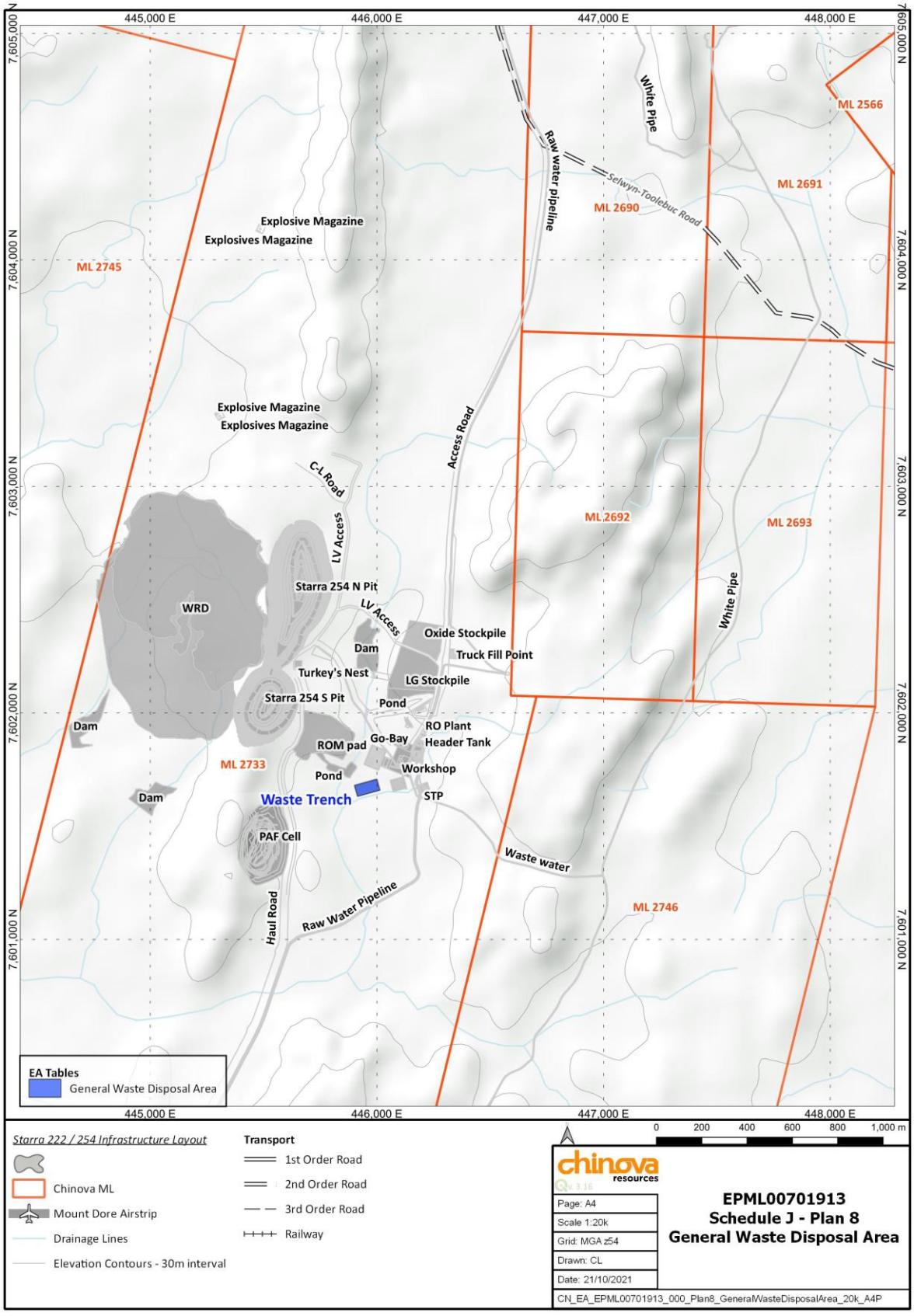
Schedule J - Plan 5 (Monitoring and Release Locations – Mount Dore Area)



Schedule J - Plan 6 (Stream Flow Gauging Station/s)



Schedule J - Plan 7 (Effluent Irrigation Areas)



Schedule J - Plan 8 (General Waste Disposal Area)
END OF SCHEDULE J

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